AUGUST, 1952

Traffic Engineering

Aerial View of New Bridge-Tunnel Project at Norfolk-Portsmouth, Virginia

- **A Dream Come True**
- **Coral Gables Opens a New Bus Terminal**
- **Traffic Engineering in Seattle—Part 2**
- **Will Our Cities Survive?**
- **ITE Convention Program**

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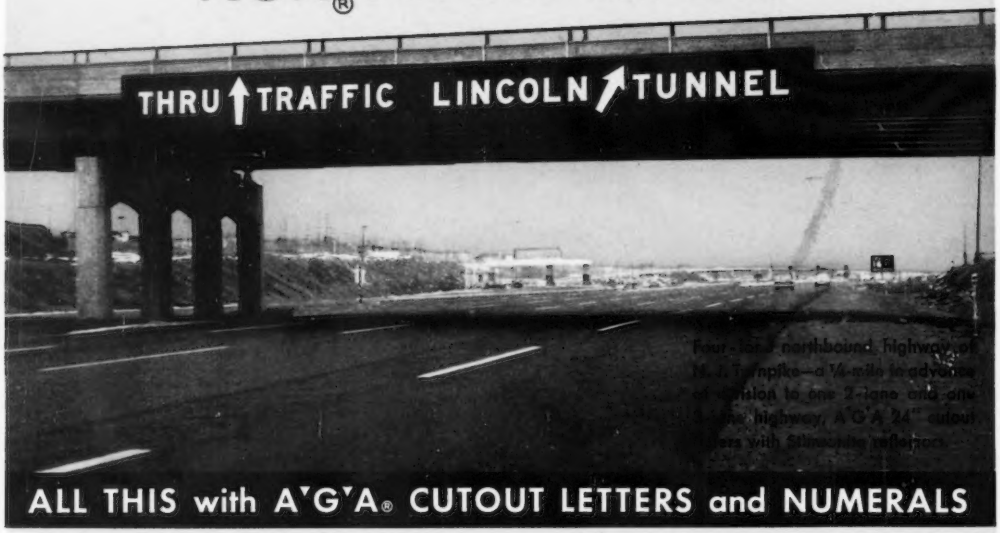

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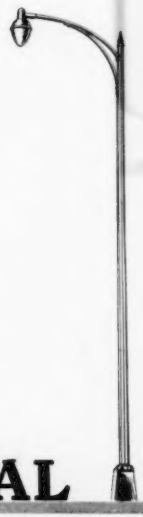

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Traffic Engineering

OFFICIAL PUBLICATION OF THE INSTITUTE OF TRAFFIC ENGINEERS

VOLUME XXII | AUGUST, 1952 | NUMBER 11

COVER: Aerial view of the recently completed $23,000,000 vehicular Bridge-Tunnel Project between Norfolk (in foreground) and Portsmouth (background), Virginia, described by Mr. Jordan under title "A Dream Come True" in this issue. The toll plaza in the Berkley section of Norfolk is at left between the Eastern Branch (nearest stream) and the Southern Branch (far stream, left) of the Elizabeth River, center and right. The huge Norfolk Navy Yard, which is located in Portsmouth, is out of camera range at extreme left top. The Norfolk Shipbuilding and Drydock Company, also located in Portsmouth, shows at top center. One of Norfolk's business district arteries, Main Street is shown passing under the bridge just beyond the nearest abutment. The old ferry landings are marked by arrows A and B.

Traffic Engineering is that phase of engineering which deals with the planning and geometric design of streets, highways, and abutting lands, and with traffic operation thereon, as their use is related to the safe, convenient, and economic transportation of persons and goods.

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May We Offer . . .

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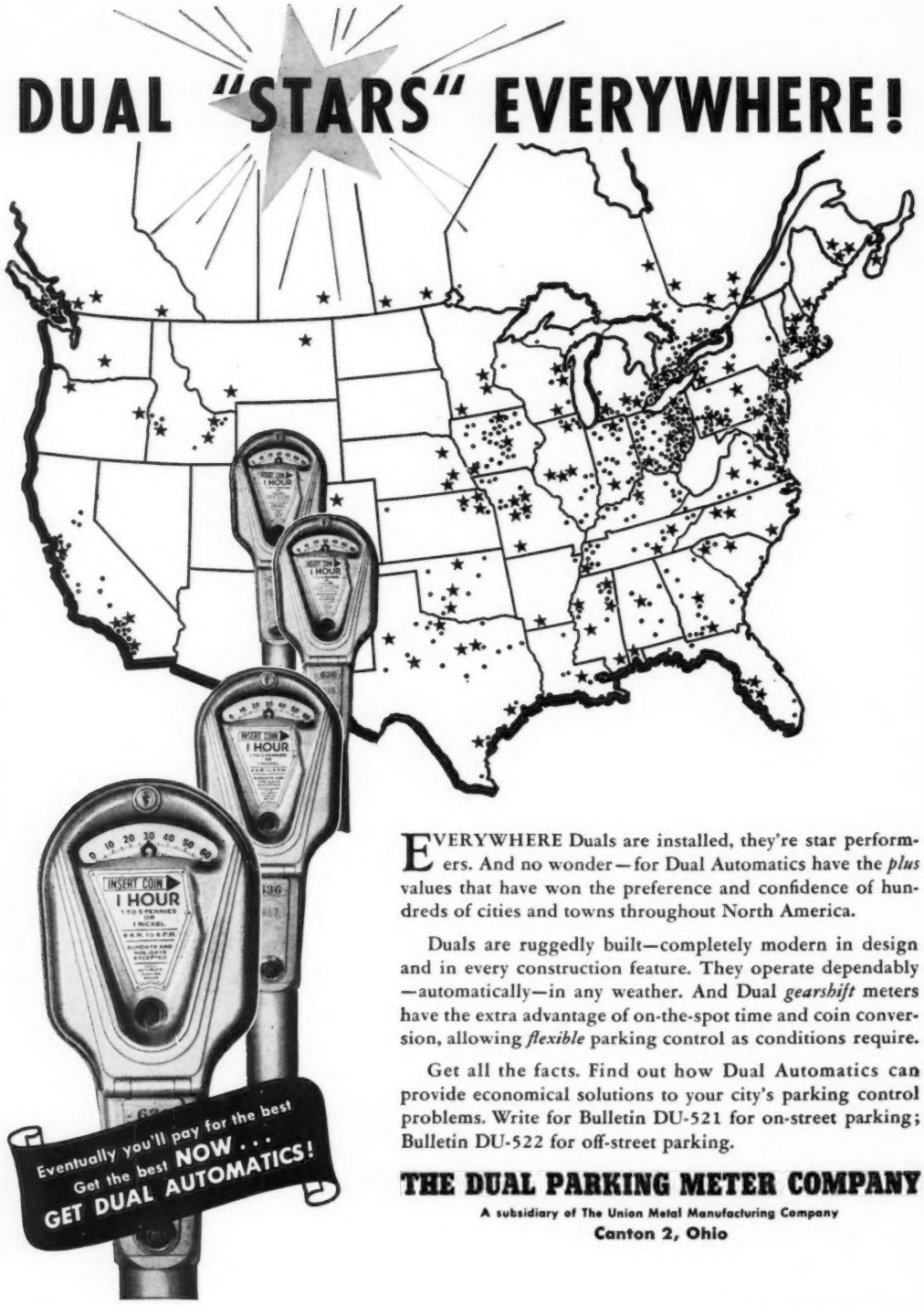
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Frankly Speaking

Isn't it possible that Traffic Engineers in solving traffic problems have been reluctant to try "something new or something different"? More and more emphasis has been placed upon the need for adopting *uniform* traffic control regulations and for installing *standard* traffic control devices. With few exceptions in recent years, little ingenuity has been used in developing improved types of traffic control.

Considering present-day traffic and parking demands and anticipating future increases in traffic volumes and in parking requirements, it is obvious that many new traffic control techniques must be developed. A very successful banker once advised his employees to "Always do the same thing in the same way at the same time all of the time." A review of methods used to control traffic and parking in many cities and states has revealed that numerous traffic officials are following a similar conservative but unsound policy. If demands of motorists for more adequate and acceptable traffic and parking facilities are to be satisfied, we Traffic Engineers must adjust our perspective. New procedures must be adopted, even though they may not conform with present national standards and regardless of how radical they may be as compared with present practices.

"Necessity Is the Mother of Invention" is a saying which applies to traffic control at this time and one which the traffic engineering profession should consider. Some Traffic Engineers have recognized the need for inventing or developing new methods and procedures for controlling traffic and have established new traffic regulations and installed radically different types of traffic control devices. Examples of these may be found in the "Yield Right of Way" signs and in the traffic control system which incorporates a pedestrian interval so that pedestrians may move when all vehicular traffic is stopped.

Although satisfying public desires for certain kinds of traffic regulations and control devices is often difficult and frequently not attainable, acceptable compromises may usually be provided by Traffic Engineers who demonstrate the advantages of adopting "tailored" traffic controls to fit specific problems. Modern traffic control requires more than average ability on the part of the Traffic Engineer. If Traffic Engineers are to successfully cope with ever-increasing traffic, they cannot expect to find answers for traffic problems in a book. Resourcefulness, courage and ingenuity must be mixed with ability.

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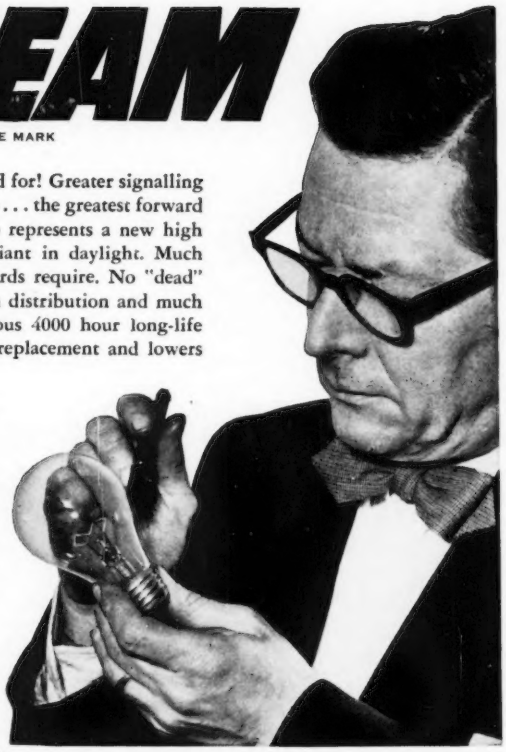

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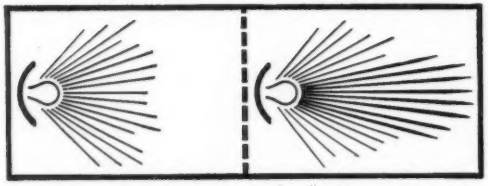

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A Dream Come True

By Fenton G. Jordan, Jr. (Assoc. Mem., ITE)

City Traffic Engineer, Norfolk, Virginia

With the opening of the Elizabeth River Bridge-Tunnel, the newest subaqueous vehicular tunnel in the United States on May 23, 1952, a 300-year dream of a physical connection between the cities of Norfolk and Portsmouth, Virginia, came true.

Since 1636, ferries had been the only means of intercity vehicular and pedestrian communication. The ferry system had its humble beginning some 316 years ago when two skiffs rowed by slaves were put into service. From this grew the present Norfolk County ferry fleet of six modern steam or diesel boats, each capable of carrying 35 vehicles and 450 passengers.

About 25 years ago, it became apparent that a physical connection such as a bridge or tunnel would be necessary to handle the ever-increasing vehicular movement between these fast-growing communities. The ferry system, no matter how efficient and modern, could not alone cope with the rising tide of motor vehicles. The bridge-tunnel offers for the first time an adequate vehicular facility between Norfolk and Portsmouth, and is truly the most significant transportation achievement in this area for many years.

The Elizabeth River Bridge-Tunnel plan, as finally adopted, consists of a double bascule drawbridge across the Eastern Branch of the Elizabeth River to the Berkley Section of Norfolk, with a 56-foot clearance above the mean high water for boat traffic; the tunnel under the Southern Branch of the Elizabeth River from Berkley to Portsmouth; and an expressway between the bridge and the tunnel. (See figure 1.) It was decided after much study that a semi-high level bridge across the Eastern Branch would be high enough to permit the passage of 75% to 80% of all boat traffic in that branch of the river, but a tunnel would be necessary under the Southern Branch, because it is the main ship channel to the Norfolk Navy Yard, approximately one-quarter of a mile upstream from this crossing. As the Navy Yard is capable of building and servicing the largest Naval vessels afloat, no bridge would be permissible over this channel.

All elements of the project—the bridge, tunnel, plazas, and expressway, should be of interest since many good traffic engineering principles have been incorporated in the design and construction.

The Bridge: The Bridge itself is 2,120 feet long, with a 46-foot finished concrete roadway providing two 11- and two 12-foot traffic lanes with two 2½-foot sidewalks on either side. The draw span is 178 feet in length, and has an open steel deck. The bridge and the plazas are illumi-

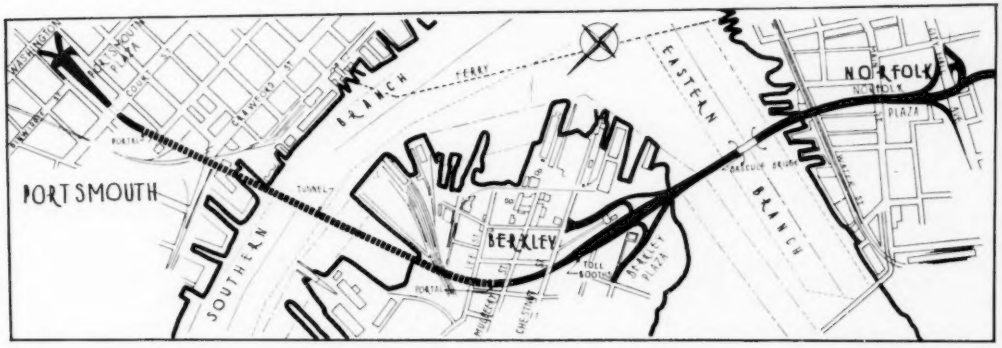


Fig. 1
Location plan showing route of Norfolk-Portsmouth Bridge Tunnel and Norfolk, Berkley, and Portsmouth Plazas.

nated by 79 Mercury Vapor Luminaires controlled by time clocks. DeLeuw Cather and Company were consultants for the bridge, and it was built by the Tidewater Construction Company of Norfolk.

The Tunnel: The tunnel is the tenth tunnel of its type in the United States, and the third to be undertaken since the end of World War II. As in the case of several others, it was fabricated in sections and then sunk in a prepared trench under the River. Before the tunnel sections were laid in place, a ditch, some 50 feet deep and 40 feet wide, was excavated at the bottom of the river. Following a grade of about 5% from shore to channel center, the trench was about 90 feet below water at its lowest point. The entire tunnel is 3,400 feet long, and is composed of seven 300-foot tube sections, with about 1,300 feet of open cut, or cut and cover sections at the ends. The outside diameter of the tube is approximately 35 feet and it measures 31 feet 4 inches

Fig. 2.
Interior view of tunnel showing increased intensity of lighting at portal.

on the inside. This provides for a 22-foot roadway, curb to curb, with a cat walk on one side for use of tunnel police and maintenance crew.

The roadway of the tunnel is black top rather than concrete or granite block as used in some facilities. This type of roadway helps hold the objectionable noise of moving vehicles to a minimum. The sides of the tunnel are of ceramic tile, and the ceiling is a porcelain enamel steel, which also has some sound-deadening properties. To end the alternate light-and-dark areas prevalent in many vehicular tunnels, a continuous line of fluorescent lamps was installed along each side of the tunnel below the ceiling which produces about 5-foot candles of light on the pavement from portal to portal. For 300 feet from each portal, a second line of fluorescent lamps is mounted on each side. The intensity of all four lines of light in these sections of the tunnel can be varied to give as much as 30-foot candles to facilitate the transition from bright daylight to the darker tunnel interior.

The ventilating system is of the latest type. Fresh air is drawn in through the portals and is exhausted from the center of the tunnel. This method was adopted because it offered the advantage of drawing smoke away from the tunnel entrances in case of fire. The single ventilation building is located near the Portsmouth portal of the tunnel. The ventilating equipment consists of four exhaust fans, each with a maximum capacity of 189,800 cubic feet per minute. When all four fans are operating simultaneously at high speed, a total of 759,200 cubic feet per minute of air can be removed from the tunnel. The air volume, of course, can be adjusted to the requirements of the traffic. The stale air containing carbon monoxide is exhausted from the roadway space into the upper air duct through grills in the ceiling, and into the lower air duct through flue openings along the tops of the curbs. These intakes extend over a length of about 300 feet at the center of the tunnel. According to George J. Murphy, Resident Engineer for Parsons, Brinckerhoff, Hall, and Macdonald, Consulting Engineers for the tube, ". . . in the event of a severe fire in the tunnel, similar to that experienced in the Holland Tunnel in 1948, the excessive heat of the exhaust air may distort the fans and impair their operation. To prevent this, automatic deluge sprinklers are installed in the air ducts which will cool the air. Carbon monoxide analyzers and indicators will keep a continuous record of the carbon monoxide content of the exhaust air and will furnish the operator the information necessary to adjust the fan capacity used. . . ."

The Plazas and Expressway: As in the case of most facilities of this type, the matter of ingress and egress was of the utmost importance in the design of the project. Past experience has shown us all too often that a facility of this type designed to reduce traffic congestion will serve little purpose if the entrances and exits to and from it are not designed with the utmost care.

The Norfolk Plaza of the Elizabeth River Bridge-Tunnel consists of a modified clover leaf interchange with two grade separations to keep traffic moving on and off the bridge with the maximum speed and safety. (See figure 1.) The bridge crosses two main east-west arteries; Main Street and City Hall Avenue. The original plan called for the bridging of Main Street only, with the bridge coming to grade at the intersection of City Hall Avenue. The Norfolk Parking and Traffic Commission, and the City Planning Commission, both were opposed to this arrangement, and after consultation with the tunnel officials agreement was reached to build the modified clover leaf.

The Berkley Plaza in reality forms the expressway link between the bridge and the tunnel. (Figure 1.) Here a rather ingenious system of ramps and overpasses has been worked out so that traffic entering and leaving the Berkley interchange and expressway does not cross traffic entering or leaving the tunnel.

The toll booths, of which there are seven, are located on the Berkley Plaza. Tolls are collected both for eastbound and westbound tunnel traffic at this point. The Administration Building, Service Building, Equipment Yard and Garages, for emergency vehicles, are all located on the Berkley Plaza adjacent to the toll booths. This arrangement permits a centralized location for the money collection, administration, maintenance, and service facilities.

The Portsmouth Plaza is the least spectacular, and from the traffic standpoint, the most inadequate. Space in the Portsmouth Plaza is severely limited. Due to this, and other reasons, mostly political in nature, the design was the best that could be worked out with these severe limitations. The Portsmouth Plaza is essentially a single roadway with four diverging fingers designed to channelize traffic entering and

Fig. 3.
Interior view of tunnel showing fluorescent lighting and air ducts in the top of curbs.

Fig. 4.
Aerial view of the Norfolk Plaza showing ramps and newly built City Hall Avenue Extension. Main Street and bridge is to the right.

leaving the tunnel. The most undesirable feature is the fact that all traffic, eastbound and westbound, to and from the tunnel must intersect Washington Avenue, one of the main north-south arteries at grade. At present, the intersection is controlled by traffic signals, but undoubtedly a redesign of the Plaza will be necessary if traffic volumes increase as anticipated.

History: While the dream came true, it ran into some nightmarish moments, before becoming a reality. There were difficulties with individuals, the governments of Portsmouth and Norfolk County, World War II, and thousands of details involving legislation, location, planning, engineering, financing, and construction. In fact, it was not until the bonds used to finance the construction were sold that many people realized the tunnel would become a reality.

There was considerable activity and agitation for the connection between Norfolk and Portsmouth as far back as 1928, but it was not until 1940 that the Virginia General Assembly passed the State Revenue Bond Act to ease the way for the construction of projects financed by the revenue bond method. In the same year a bill known as the "Elizabeth River Tunnel Revenue Bond Act" was enacted. This bill authorized the creation of an Elizabeth River Tunnel Commission, and gave it power to issue bonds and acquire land for a bridge or tunnel, or both, and to carry on the necessary negotiations with Norfolk, Portsmouth, and Norfolk County. Interesting to note, and it turned out later to be of vital importance, the Legislature gave the localities no power of veto.

Governor Colgate W. Darden, Jr., appointed a five-man commission consisting of General James A. Anderson, Chairman of the State Highway Commission, three members at large from Norfolk, Portsmouth, and Norfolk County, and Mr. Thomas P. Thompson, former City Manager of Norfolk, as Vice-Chairman and Executive Director. Mr. Thompson was the driving spirit in making the dream of years come true. He worked tirelessly on this project and overcame opposition from all sides. Partially as a result of this work he was named "First Citizen" of Norfolk for the year 1951.

The Norfolk City Council loaned the Commission $15,000 for an engineering survey, and the Commission employed an engineering firm then known as Parsons, Brinckerhoff, Hogan, and Macdonald, of New York, and the J. E. Grenier Company, of Baltimore, Maryland, as engineering consultants. The engineers studied several locations and recommended as their first choice a bridge to span the river directly from Norfolk to Portsmouth. The Army Engineers

(Continued on page 413)

Coral Gables Opens a New Bus Terminal

By Earl J. Reeder (Mem., ITE)
Partner, Rader Engineering Co., Miami, Florida

CORAL GABLES, Florida's planned city, recently opened a new municipal bus terminal near the heart of its central business district. Then it replanned its downtown traffic movement to take maximum advantage of the benefits which the new terminal and its location permit.

Coral Gables has a municipally owned bus system which operates ten local lines and an inter-city line between its central business district and the downtown section of Miami, a distance of about five and one-fourth miles. The local runs radiate in various directions from the new terminal and to a large extent they serve as local feeder and distributing lines for the heavily traveled Miami route which carried nearly 30% of all the passengers carried by the system.

The new terminal is located one block from each of the city's two main intersecting business thoroughfares, Coral Way and Ponce de Leon Boulevard. Hence, it is only two blocks from the center of business activity. This location is especially favorable from two standpoints. It brings all of the lines in this system to a terminal within this rapidly growing shopping center and at the same time it provides a convenient central transfer point between all of the lines in the system. All of this is done with the busses standing off the street and out of the way of all other traffic while receiving and discharging passengers and making these transfers.

The new terminal building, which was designed by Walter Butler Company of St. Paul, Minnesota, provides 17 stalls for busses to occupy simultaneously. The busses standing in these stalls head toward a central passenger concourse along which the stalls are distributed at an angle on both sides. Busses can enter the terminal from streets on both sides and reach their individual stalls from service drives paralleling these adjacent streets.

The terminal lies between Aragon and Giralda Avenues running east and west, the former one block north of Coral Way. It faces Salzedo Street which is one block west of Ponce de Leon Boulevard. Curb set-backs permit parking along the terminal property on both avenues and a parking lot has been established west of the terminal, all serving persons who may come to the terminal by automobile.

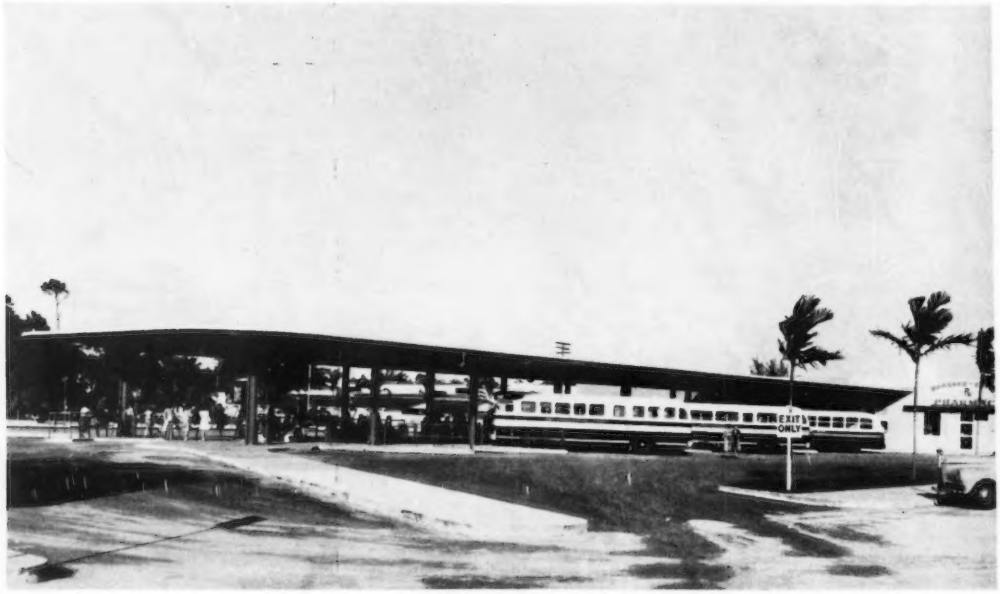


Fig. 1.
Passenger concourse viewed from Aragon Avenue. Terminal building at right.

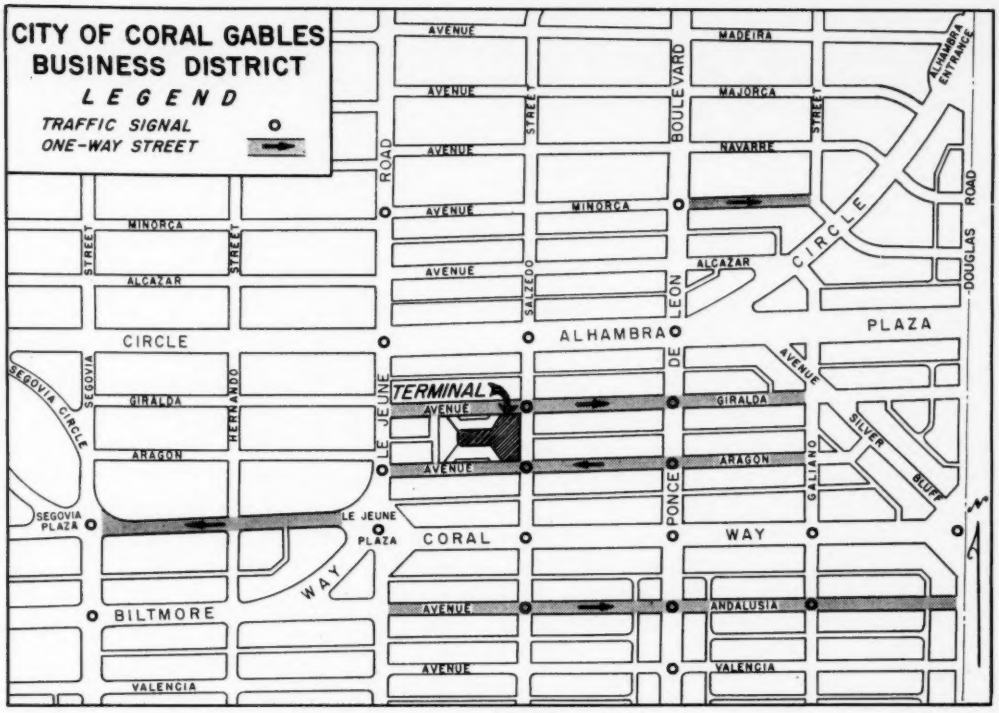


Fig. 2
Map showing new terminal and recommended traffic way plan.

This new terminal replaced an older one which had a capacity of only six busses at one time and was entered from Coral Way only a short distance from Ponce de Leon Boulevard. While it was theoretically an off-street terminal its capacity was inadequate for the purpose and congestion resulted in and around its entrance from the city's most important thoroughfare. Furthermore, in entering busses had to cross a sidewalk carrying a great deal of pedestrian traffic.

The new traffic control plan was recently developed for the city by Rader Engineering Co. It included a one-way street system designed especially to provide easiest access to the new terminal. This plan will make Aragon Avenue, immediately south of the terminal, one-way west bound so that busses can turn into and out of the terminal without cutting through other traffic in the opposite direction. Giralda Avenue on the north side of the station will be one-way east bound to provide the same type of access and exit for busses using the north side of the terminal.

Andalusia Avenue, lying one block south of Coral Way, will be one-way west bound, according to this plan, to provide easy access by left turns into parking lots lying between this avenue and an alley serving the many stores on the south side of Coral Way. It is not considered necessary to restrict Valencia Avenue, one block south of Andalusia, to one-way traffic west bound because it is wide enough to handle the two-way traffic and balanced capacities are not as important there as they are north of Coral Way. The business development is greater in the latter direction.

It is proposed to make Coral Way one-way west bound for two blocks between LeJeune Road and Segovia Street to simplify traffic signal operation at LeJeune Road. Coral Way is narrower west of LeJeune Road but it carries heavy traffic between that five-point intersection and Segovia Plaza, requiring a long third phase of the signal at LeJeune Road to handle the two-way movement. By diverting the east bound traffic on Coral Way west of Segovia Plaza to Biltmore Way the number of approaches is reduced to four at LeJeune Road and the signal can be operated on a two-phase cycle. The very wide appproaches from the east on Coral Way and the west on Biltmore Way permit a short phase of the cycle to handle the traffic from these directions.

The one block section of Minorca Avenue that is restricted to east bound traffic between Ponce de Leon Boulevard and Galiano Street is adjacent to school property. Its problem is very local and traffic is simplified by the one-way restriction.

By taking the bus terminal entrances and exits away from the two major thoroughfares traffic movement has been simplified somewhat on these streets for both vehicles and pedestrians. Studies showed that this fact combined with better coordination will permit reduction of the cycle of traffic signal operation throughout the system of 20 inter-

connected signals in the central business district from 60 seconds to 45 seconds. This will permit higher vehicle speeds with better progression of traffic throughout. It will, also, provide shorter waiting periods of pedestrians at signalized intersections and thus increase pedestrian conformance with the signals.

The new bus terminal not only serves the busses of the Coral Gables system but it also provides off-street loading and unloading spaces for inter-urban busses. This avoids the need for a separate terminal to accomplish the same purpose and permits passengers to change between local and inter-urban busses by walking only a few steps between them.

The terminal structure is a one-story T-shaped building with offices, waiting room, news-stand, and stores located in the head of the T along Salzedo Street and the covered passenger concourse extending westward midway between Aragon and Giralda Avenues. The dispatching of bus departures is done from the dispatcher's booth centrally located in the covered concourse. Bus departures are announced by public address system.

The bus stalls along the concourse are assigned to specific runs. Any attempt to provide the same capacity for bus loading and unloading on the street would require one side of about two city blocks. This would result in passengers having to walk a considerable distance and to cross streets in many cases in making transfers.

Coral Gables had a permanent population of approximately 20,000 in 1950. The University of Miami, which is located in the city, had an enrollment of more than 10,000 students, many of them married with families, thus adding very substantially to the local population during most of the year. The city is predominantly residential with a great many of the residents having their business or employment in Miami. This accounts for a high percentage of the bus system's total passenger load being carried on the Coral Gables-Miami line.

The Coral Gables Bus System presently operates 43 busses. These total approximately 120,000 miles per month at the peak. The number of passengers carried during peak months is about 340,000. These figures show the extent of the operations which center at this new terminal and radiate from it.

The conditions in Coral Gables are especially adapted to a central terminal for all local busses. The business district is distributed mainly along two intersecting streets. The city was very fortunate in acquiring available property so conveniently located with respect to both of these streets. The street pattern is particularly favorable as the streets are of about equal width on both sides of the terminal. Consequently, with the two adjacent streets restricted to one-way traffic in opposite directions there is adequate capacity on both for handling all of the busses that use the terminal, including the large overland interurban busses, in addition to the normal vehicular traffic.

In a much larger city with narrower streets and, perhaps, an irregular street layout, a central terminal for local busses would not be nearly as practical, if feasible at all. First, it would result in too great concentration of busses in a small area. Then, the terminal would be too far from many destinations in the central business district and practically the same number of additional stops would be required to render the service that would be needed without the central terminal. Furthermore, a city which was itself a metropolitan center serving a large population outside of its own limits would undoubtedly have a much larger business district in proportion to its own population than is true in Coral Gables. This condition would accentuate the disadvantages.

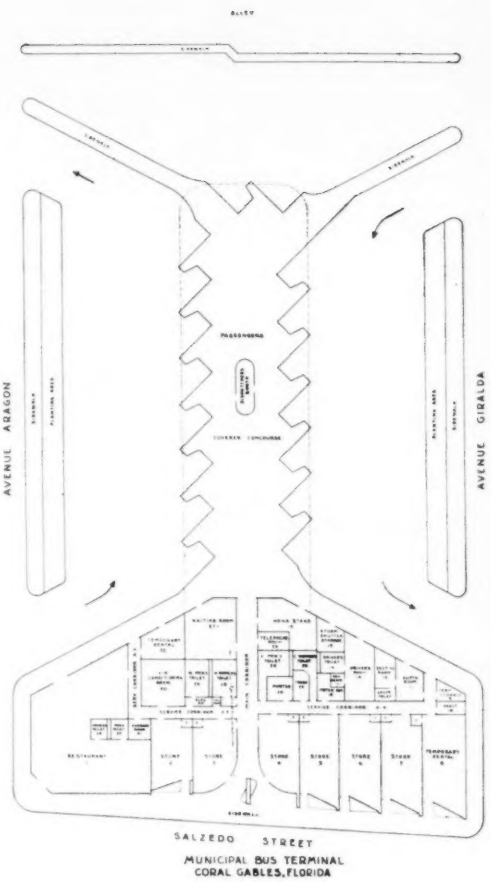


Fig. 3
Plan of new bus terminal building and passenger concourse.

For a city of the size and type of Coral Gables the central terminal is particularly advantageous. Other cities of the same type and in similar locations can well afford to exercise the same good judgment and foresight that have been shown by Coral Gables in obtaining well located property for central bus terminals while it is yet available.

Traffic Engineering in Seattle - Part 2

By J. W. Arch Bollong (Mem., ITE)
Traffic Engineer, City of Seattle, Washington (Retired)

This is the second part of the fourteenth of a series of articles written by traffic engineers in cities of various sizes throughout the country.

The introductory remarks for the first part of this article last month stated that Mr. Bollong had prepared the article which included activity summaries by five of his assistants, in connection with his final report to the City Administration prior to his retirement from city service July 1, 1952 to devote full time to his consulting firm.

Last month's article included Mr. Bollong's Prologue, the reports on Traffic Surveys by Mr. E. E. Lewarch, and Traffic Safety Lighting, by Mr. Bruce R. Culver. The final part of the Seattle Traffic Engineering story which follows is comprised of the reports of Messrs. Warr, Sawhill and Fairbairn who were Mr. Bollong's Assistants prior to his retirement.

TRAFFIC SIGNALS

By Robert H. Warr (Jun. Mem., ITE)
Assistant Engineer — Traffic

IN general the traffic signal system of Seattle may be divided into two parts:

I The Central Business District
II The Outlying Areas

The Central Business District traffic signals are completely interconnected by means of a master cable. The controls are operated by induction disc motors and have a single dial. The area comprising the Central Business District has a grid street pattern with block lengths of 300 to 425 feet and a width of 300 feet. The area extends in a north-south direction for fourteen blocks and varies in width from five to nine blocks.

Approximately one-half of the controls for the Central Business District are located on a switchboard in the County-City Building and the other half are located on the streets, controlled from a board in the northern half of the Central Business District. Both boards are interconnected by master cable. The circuits to the lights are cascaded through relays located at the intersection. This permits the use of No. 22 wire in the cable, one side of which is grounded, and eliminates all problems of voltage drop.

The length of the cycle is controlled by varying the voltage placed on the induction disc motors.

As the major volume of the traffic movement is in a north-south direction, the signal timing is set to provide for northbound or southbound progressions with a speed of 25 M.P.H., rather than the 50-50 splits or double alternates generally used in grid systems.

The majority of the traffic signals in outlying districts are located along the arterials which extend from the Central Business District to the north, south, or east. Four methods of control are used along these arterials:

Fig. 4.
Control Panel for south half of central business district in County-City Building. Mastering equipment is on left of panel.

I Multi-dial interconnected controls
II Multi-dial non-interconnected controls
III Single-dial interconnected controls
IV Single-dial non-interconnected controls

The multi-dial equipment is used in the areas adjacent to the Central Business District, where the fluctuation and the total volumes are the greatest. The peak-hour cycle is extended to as much as 180 seconds, with a one-way progression used to favor the flow of traffic and produce a wider band. During the off-peak hours a 30 M.P.H. two-way progression is maintained.

The single-dial equipment is used where the volumes are lighter, at the extremities of the arterials.

In the case where there is no interconnecting cable, the relationship of the various intersections is maintained by the synchronous characteristics of the operating motors. Due to Seattle's mild climate, power failures or cold weather stoppages are very rare.

In the post-war period from 1946 to the present time, the Traffic Engineering Division has installed traffic signals at thirty to fifty intersections a year. At the present time there are 447 signalized intersections within the city limits.

Authority to install traffic signals and the appropriation of money are from Council Ordinance, based on warrant recommendations by the Traffic Engineer.

Each location recommended for signalization is analyzed to determine the traffic conditions that will be corrected by traffic signals and the method of control to be used, as well as speed control. This requires choice of suspended or corner signals, and decision as to the necessity of a left-turn

lane, pedestrian signals, fixed time or traffic actuated control, or the inclusion of special features. In order to obtain data for these conclusions, traffic volume counts, speed and delay studies, collision diagrams, and detailed vicinity sketches are made up for each location.

Much modification is performed on the controls after they have been received from the factory, to obtain the most efficient use of time available at the intersection. If the analysis of an intersection shows a problem such as a short peak load caused by a factory dismissal occurring in an opposite direction to the usual evening traffic, modifications will be made by means of relays and time switches to give the effect of a fourth and even a fifth dial. At other locations provisions are made so that an intersection can be changed from two-phase to three-phase, by pedestrian push-buttons, or by time switches, or a phase may be skipped entirely during a peak hour.

As the number of signalized intersections in the city has increased it has become more and more difficult to designate locations where a new signal installation could be classed as an isolated operation. This means that its operation is incorporated into existing progressive system or that other signals previously considered as isolated signals are close enough to necessitate the establishing of a relationship between the locations. One of the points in determining signal location is that of fitting the location into a progressive movement that is either existing or contemplated for the future. If the installation of a signal is required in a progressive system at a point where effective progression cannot be obtained and the volume entering from the side street is relatively low, very successful operation is obtained by the use of a traffic actuated control. Since there is a delay to some movements of traffic, regardless of when the side street traffic enters the intersection, the irregular timing of the traffic actuated control will introduce delays occasioned by the side street at different points in the flow of traffic and will also reduce this delay to a minimum.

In addition to the signal installation program, a major project which was completed in January of 1951 was the changeover of the existing signal system from a two-color indication to the standard three-color indication. While the actual change was made during a 48-hour period, the preparations took nine months and cost $63,000. Many of the controls, some twenty years old, were rebuilt to provide an additional period for the amber interval, and underground cable was replaced to provide for additional circuits.

Future plans call for a change to pedestrian signals on all corners in the Central Business District, with pedestrians either restricted during part of the vehicular phase, or moving on a separate "All-way Pedestrian Go" phase, as the location and pedestrian volume will require. Vehicles will be controlled by center suspended signals which are shielded from view of the pedestrian.

Use of the sampling method of cycle determination will also be incorporated in the central district in the future.

Interconnection and multi-dial equipment is planned for arterials which still have single dial equipment or old types of controls. Almost all controls purchased in the past several years have been of the multi-dial expandable type.

CHANNELIZATION AND PARKING METERS

By Roy B. Sawhill (Jun. Mem., ITE)
Assistant Engineer — Traffic

Channelization

Seattle, being a city of scenic hills and numerous waterways, has a network of curving and diagonal streets superimposed upon a complicated network of intersecting grid-iron systems. Such a situation results in wide and multiple approach intersections, which bewilders the motorist and is subject to chaotic conditions during peak hours of vehicular operation, if control is not provided.

One of the main purposes of channelization is to guide the driver through confusing areas and eliminate as many conflicts as possible between vehicles, and further, between vehicles and pedestrians. This protective guidance is accomplished in varying degrees, depending upon the potential hazards.

1. *Paint Lines*—Lines painted on the surfaced streets are the elementary form of channelizing both drivers and pedestrians into their proper area when utilizing a street area. Such lines are, center lines, lane lines, pedestrian crosswalks, stop lines, and lines for special movements such as left-turn shadowing lanes.
   In 1951 Seattle's paved street mileage totaled 993 miles, or 74 per cent of the total street mileage open to traffic. Upon the surfaced streets are maintained 294 miles of center and lane lines, and 1,409 painted crosswalk areas.
2. *Precast White Concrete Buttons*—Buttons one foot in diameter and 2¾ inches in height are used to emphasize paint line channelizations as well as provide a trial installation prior to more permanent channelization. Buttons have proved successful in outlining left-turning lanes and median islands where abutting business establishments would be discriminated against by a permanent type of channelization. These buttons are also effective in diverting traffic away from obstacles in the roadway and in extending permanent type channels into the crosswalk or intersection areas.
   The average cost per button in place is $1.50.
3. *Precast White Concrete Reflecting Traffic Curbs*—This type of curbing is made to the Traffic Engineering Division's standard specifications; with three different cross-sections, as well as a number of radii, a variety of designs may be accomplished with simplicity. The advantages of this type of curbing for permanent type channelization islands are that concrete forms are not required and the island shapes may be outlined for a trial period prior to placing the fill material between curbs. The precast curbing may be mounted in emergencies without injury to vehicles and has that advantage over a vertical concrete curb as well as having greater reflecting characteristics.
   The warning of such islands in the roadway is accomplished by installing reflectors and illuminated nosing terminals as well as by providing adequate street lighting.
   When precast curb pedestrian islands are constructed

Fig. 5. Before.

Fig. 6. After.

A Seattle intersection channelization constructed with precast white concrete curbs.

it has been found advisable to pour a vertical concrete curb where the pedestrian mounts the island.

The cost of installing precast concrete curbing varies with the length of curbing. From previous installations the cost in place has been found to vary from $2.50 per lineal foot for 100 feet of curbing, to $1.75 per lineal foot for 1,500 feet of precast curb. The cost of the island filler material, 4½-inch crushed stone and 1½-inch asphalt surfacing, will, of course vary with the design of the islands.

Seattle has over one hundred of its intersections channelized with either traffic buttons and/or precast concrete curbs.

Parking Meters

As has been stated in the prologue, in the narrow neck of Seattle's hourglass shape lies the Central Business District, which is subject to congestion, particularly during peak-hour operation when a large percentage of through traffic must traverse the central business district due to Seattle's topography.

The result is that curb parking is restricted on both sides during the rush hours on the majority of the north-south streets and on one side of most of the east-west streets. Coupled wtih this situation is the fact that 65 per cent of the off-peak parking in the central business district is at the curb and therefore a method of control and enforcement is necessary for the purpose of facilitating the flow of traffic during peak hours and inducing turnover of vehicles at the curb during the business hours of the day.

To solve this problem Seattle has installed parking meters and posted zones which are restriced to: passenger loading, truck loading, bus, and special danger zones. Since the largest percentage of parkers utilize the curbs in the central business district and this space represents only 24 per cent of the available spaces, including lots and garages, it is necessary to restrict both metered and unmetered spaces to 60 or 30-minute parking. Sixty-two per cent of the curb parking spaces in the 143 blocks of the central business district are metered, requiring 2,396 meters.

Although the Traffic Engineering Division does not consider meter revenue as a warrant for parking meter installation, the City Treasurer's Department maintains not only an account of meter revenue per year per meter by districts, but also by individual parking meters. This is felt necessary for efficient collection of the coins. The meter revenue per year is constant, depending upon the number of meters, but it is interesting to note that the Central Business District meters average $92 per year while outlying business districts vary from $65 per year in the Roosevelt and Broadway Districts to $105 per year in West Seattle. From the 2,396 meters in the Central Business District and 740 meters in the outlying business districts a total revenue of $282,055.54 was collected in 1951. Of this sum, which is deposited in the General Fund, 6 per cent is required for collection and only 8 per cent for meter repair and maintenance. The parking meter shop is centrally located in the Central Business District and carries on a systematic procedure of maintenance by numbering all meters and meter mechanisms so that they may be picked up for periodic routine inspection and cleaning.

With the completion of the Alaskan Way Viaduct, it is proposed to add approximately 250 meters under the lower deck. Since this area is located on the outer edge of the Central Business District it is very likely that the parking time limit will be greater than 60 minutes in some areas, while all-day parking may be allowed in a few locations. This will be, in a sense, off-street parking operated by the municipality.

At present we do not have a legislative enabling act allowing cities to purchase property for off-street parking. Two tries have been made, in 1949 and in 1951, to secure such an act. However, opposing interests, namely merchants and building managers, have changed their attitude and it is felt that the next session will see an act passed permitting such purchase for private operation of off-street parking.

INSTALLATION AND CONTROL OF TRAFFIC CONTROL DEVICES

By R. W. Fairbairn
Assistant Engineer — Traffic

When the surveys and studies have been tabulated and analyzed, the design engineer has made his final recommendation, the draftsman drawn his last line, it is then the job of the engineer in the field to actually fulfill the ultimate goal. The lineman, the sign painter, the signal serviceman and the laborer are equal cogs in the wheel that makes possible the many wheels to turn upon the city streets.

Fig. 7.
Seattle-built jeep pavement striper in action.

Each day, with the placement of new signs, additional signals, parking meters, and more channelization, the load is increased on the already overburdened maintenance program. It then becomes a problem of mass production of signs, accelerated and proficient electrical maintenance and overall efficiency of maintenance men.

Climatic conditions in the Northwest somewhat relieve the burden of the sign maintenance section. Beginning with the good weather, in the month of April, four sign replacement crews start a program of 700 miles of street painting. This extensive program is made possible by use of a Seattle-designed and built Jeep paint machine.

This Jeep is entirely self-contained, with power take-off, compressor, two 15-gallon paint tanks and all necessary fittings. It is capable of painting single or double centerline, skip line and crosswalks and has the distinct advantage of being operated by one man. The use of a panel truck to carry spare paint and one flagman allows this Jeep machine to paint 10 to 15 miles of centerline per day in the urban areas.

With the beginning of the traffic line painting season, the sign painters then have sufficient time to stock the signs and posts necessary to resume the sign replacement program in the Fall. Efficient operation of the sign paint shop is aided by a complete water-wash spray booth, production line methods and silk screen processing of signs. In addition to the air-dry enamels, Seattle is now equipped to bake-enamel metal signs and force-dry signs to expedite production. All metal and aluminum signs returned on a three-year replacement program are placed in an electrically heated paint stripping tank that removes all paint in a few hours. The sign plates are then processed through the paint shop and returned to the streets. There are 41,043 traffic signs on the streets to be maintained, none of which is over three years old. This constant rotation of signs demands mass production, which is only achieved through proper scheduling and planning.

The seasonal requirements of the painting program is not true of the electrical maintenance section. The around-the-clock operation of Seattle traffic signals requires 24-hour maintenance. At all hours of the day and night a signal serviceman is constantly inspecting and servicing electrical traffic control devices. To properly maintain these electrical installations, a weekly inspection of all equipment is performed and complete records maintained.

Traffic signal controllers are returned to the electrical shop once each year for a complete overhaul. This overhaul is performed by a senior serviceman who is especially trained in the servicing of each type of controller. In the event of trouble with a controller in service, the entire controller is replaced immediately with a spare and the faulty mechanism is returned to the shop where proper and complete servicing can be performed. To facilitate the dispatching of electrical maintenance equipment, all vehicles are equipped with two-way FM radios.

Two line trucks with elevating towers complete the electrical section. One crew is used almost exclusively for new construction, while the other performs field maintenance of line equipment. The construction crew, consisting of one line foreman, two linemen and a driver-materialman, installs all traffic signals, lighting and other new installations.

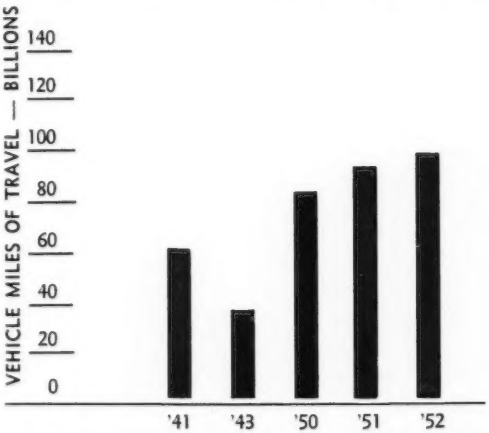
Outlying suspended traffic signal installations are completed in less than twelve hours, with the corner type signal installations requiring two to three days, depending upon the underground requirements.

Safety fence construction and repair, parking meter installations and channelization construction are also functions of the organization.

A traffic engineering organization having its own construction and maintenance division has many distinct operational advantages. The understanding and close liaison between the man in the field and the traffic engineer pays big dividends to the public.

Seattle is one of the few cities to have all of the functions of a traffic engineering division; i.e., design, installation, and operation, all under one head. Authority and responsibility correctly combined give greater efficiency in all respects.

Traffic Trends



TRAVEL ON RURAL ROADS FOR FIRST FIVE MONTHS OF 1941, 1943, 1950, 1951 and 1952.

Based on Bureau of Public Roads Data

Will Our Cities Survive ?

By G. Donald Kennedy (Mem., ITE)
Vice-President, Portland Cement Association, Chicago, Illinois

The following paper was presented at the Luncheon Meeting of the Fourth National Businessmen's Conference on Urban Problems in the Grand Ballroom, Multnomah Hotel, Portland, Oregon, June 24, 1952.

FIRST let me compliment the Chamber of Commerce of the United States and the Portland, Oregon Chamber of Commerce for sponsoring the Fourth National Businessmen's Conference on Urban Problems. Such programs held in other years have been profitable and have laid the groundwork for business action by community leaders in all parts of the United States. It is particularly timely to reconsider these problems in order that businessmen can turn their attention to home affairs. In our day the aftermath of World War II has merged so completely with the shadow cast by the Kremlin that most businessmen have been spending a great deal of their thought on the international crises. I make reference to this fact not because of current vogue, but rather because of the implications on our American cities.

While some of our national leaders have pointed out that we cannot carry on our present international commitments without a strong economy in the United States, I have not heard it stated that we *must* redevelop our urban areas in accordance with their obvious needs if our domestic economy is to long prosper. In my opinion this redevelopment is necessary, not because of the threat of foreign invasion but rather because of the basic need for better urban work facilities to carry on the American way of life. It is my hope that in the not-too-distant future a way can be found which will permit the world to live under circumstances where two great armed camps are not the dominating theme.

Whether or not this hope becomes a reality, I challenge the thinking that, through fear of bombing, our cities should scatter completely from a normal pattern of planned redevelopment. By that I mean that we cannot abandon the concept of a central business district for an urban or metropolitan area in favor of scattered, small community centers.

The redevelopment of our cities is proceeding at a rate that is observable to any resident noting progress over perhaps a quarter of a century. The complete reorganization of our cities as contemplated by some planners could not occur within a century and then would not accomplish its purpose of protection against atomic attack. Nor can we build our cities underground. Hard engineering facts deny these dreamy visions.

These basic and simple facts call for a more determined effort on the part of our government for a solution to the threat of the Iron Curtain.

In the meanwhile, to turn to my inquiry of today, the topical question is answered in the affirmative. Our cities will survive. They are surviving and the basic problem is to obtain the support of businessmen and governmental leaders for a greatly accelerated program of wholesale redevelopment in accordance with well-understood engineering principles. While there has been a considerable failure to rebuild wornout facilities, for a variety of reasons, the greatest part of our current distress is brought about because of the develpoment and use of the motor vehicles. I will not take your time today to cite the figures which indicate the extent of the change in transportation habits or the figures that clearly indicate the nature of the corollary problems. They have been recited many times before.

The necessity of the present situation is for the immediate acceptance of a new plan of urban express highways for every American city, for their immediate construction and for the redevelopment of large areas within the segments created by express highways.

One American city and one American state have accepted this point of view. Fortunately for the purpose of this Conference in Portland, Oregon, that city and that state are located on the Pacific Slope. My story of the certainty of city survival will therefore recite the principles involved in this case history and describe the extent of the progress that has been made in the fulfillment of the plan. The city I have in mind is Los Angeles and the state is California.

Since the Chamber of Commerce of the United States has enunciated the accepted principles which have been adopted in this Los Angeles and California example, frequent reference will be made to these statements.

Ten years ago the Chamber organized a Conference Committee on Urban Problems and today's Businessmen's Conference is the outgrowth of that early effort. The purpose was to deal with the businessmen's interest in city redevelopment, growing out of the mobilization of city residents as motor vehicle users.

Decentralization of cities, attendant upon the change in living habits of people, began more than three decades ago and brought with it a host of municipal problems, lying in the wake of the decadence of the central business district and its environs.

Among these disturbing problems were the enormous loss of property values in the central business district of each community and the development of crime-breeding slum areas in the vicinity. Failure to rebuild wornout buildings in the older sections of the community gave rise to the necessity for wholesale redevelopment of entire sections of the city. These blighted areas constitute a menace to the well being of the city as well as to the financial stability of the local government.

In the hearts of American cities private investments have been made in structures whose remaining life will run into many, many decades. In the street systems surrounding these structures there have been built utilities and public

works of tremendous value, the result of orderly construction programs consummated over a period of many years.

City Redevelopment with Modern Highways

In a booklet, entitled "Here's How You Can Help Redevelop Your City With Modern Highways," the U. S. Chamber advocated the planning and engineering priciples involved in the illustration which I will use today. This booklet, published toward the end of World War II, pointed to modern express highways (called freeways in California) as the solution to urban traffic problems. Planning consultants developed the fact that a network of freeways is needed to permit traffic to move directly from origin to destination throughout a city. Such a plan includes "radial" routes linking the downtown district with outlying sections of the city and connecting with main highways outside of the city. Studies have shown that 80 to 90 per cent of rural traffic approaching most cities wants to enter and stop, with the downtown district as the major destination.

The second element of a major plan includes circumferential "belt lines" around the central business district, through the residential area and again around the outer edge of town, serving an obvious purpose for the free movement of traffic in various sections of the city and creating a boundary for the downtown district as well as the outer fringe of the town.

Piecemeal efforts, usually in the outer reaches of the city, have been made by many American cities in attempting to reach this desired goal. Only in Los Angeles has the problem been tackled at its core and on an adequate scale to insure the preservation of the city.

It has been done as a result of state legislative action in providing authority and funds for the state highway department to build the freeways required for the movement of traffic and the orderly redevelopment of the metropolitan area.

California Tackles the Problem

Wartime growth in California made it evident to the legislature that the state was to face entirely new problems in the postwar period. Between 1940 and 1950 the population of the state increased 3,700,000, a growth of 53 per cent. The total population in the 1950 census was 9,600,000 people. The growth is still continuing.

Recognizing this condition, Governor Warren and the state legislature authorized the creation of a Legislative Interim Fact-Finding Committee in 1945 and directed it to study and analyze all facts relating to highways, roads, streets and bridges of California. In September 1945 the Committee authorized the Automotive Safety Foundation engineering staff to undertake this study. The result was a volume called "Engineering Facts and a Future Program . . . A Study for the California Legislature Relating to Highways, Roads, Streets and Bridges."

The legislature enacted the essential recommendations of this report in the Collier-Burns Act after a prolonged battle. A greatly enlarged program of state highway construction was financed through an increase in gasoline tax and motor vehicle registration fees.

The engineering report emphasized the necessity of classification of highways in accordance with the recognized principle of service rendered. Under the California highway law a "freeway" is defined as a highway to which the owners of abutting lands have no right or only a limited right of easement or access. Coupled with this principle of property ownership were the most modern principles of engineering design for the safe and orderly movement of large volumes of motor vehicles.

In addition to the wide and protected right-of-way, design standards call for a dual highway with opposing streams of traffic separated by a median strip. All intersections require grade separations, usually of reinforced concrete. For the high volume routes such as the Hollywood Freeway, now carrying 100,000 vehicles per days, eight lanes of concrete pavement each 12 feet wide are specified. Long acceleration and deceleration lanes are provided for entrance and exit. A recommendation was made for the establishment of a California expressway system, consisting of 2,160 miles, as the primary highway system to meet California's future needs. This essential plan followed the pattern recommended by the U. S. Chamber of Commerce. Elements of this planned system of expressways become freeways under the California law when so designated by administrative act and are thenceforth eligible for construction to the highest standards recommended and provided by law. One-half of the controlled access mileage of the United States is represented in California's plan.

Various portions of the system have been designated as freeways and are in various stages of progress under the state construction program. Remarkable accomplishments have been made since 1945. $450 million has been spent on the deficiencies on this system since the end of World War II and progress is continuing at the rate of $45 million per year.

With respect to the planned system, attention is called to the extension of the statewide system of 2,000 miles into and through the metropolitan areas of San Francisco and Los Angeles.

Los Angeles Area in Agreement

As a result of agreement between the myriad of municipalities and other governmental units in the Los Angeles area, attention has been focused on the 380 miles of recommended expressways which have or will be designated freeways under the California law and eligible for improvement to high standards. The plan for the area satisfies the principles laid down by the U. S. Chamber of Commerce. It consists of a circumferential rectangle around the central business district, with radial arteries emanating from the central business district into the various quadrants of the city with provision for outer circumferential routes where they are most needed. The topography of the foothill region as well as other physical developments shape the ideal plan into an adaptation tailored for the specific area.

Prior to World War II the Arroyo Seco Freeway, seven miles in length from downtown Los Angeles to Pasadena, was the only freeway in Los Angeles. Progress on the *Los Angeles Freeways* plan has been notable. Toward the construction of this system $150 million has been spent since World War II by the state highway department. Construction is now continuing at the rate of $30 million per year. The benefits of the state carrying on the actual construction program through the maze of local governmental units can hardly be overestimated.

(Continued on page 413)

Fourth National Businessmen's Conference on Urban Problems

By C. C. Robinson (Jun. Mem., ITE)

Assistant Traffic Engineer, City of Portland, Oregon

PUBLIC vs. private parking; mass transit vs. freeways; and the problems of decentralization and urban planning were thoroughly discussed at the Fourth National Businessmen's Conference on Urban Problems held in Portland, Oregon, on June 23 and 24, 1952.

Following a welcome by Mayor Dorothy McCullough Lee, the conference went into high gear with a panel discussion on Urban Planning problems led by Charles B. Bennett, Director of Planning for Los Angeles. The discussion centered on the problems of suburban growth, often in unincorporated areas without proper controls. Harry Marks, Mayor of Modesto, California, sounded the cry "What is Urban should be Municipal" and deplored the "free ride" of fringe areas on the shoulders of the municipal taxpayer.

This was answered by Ralph Walstrom, Portland real estate consultant, who pointed to past and present failures in municipal building regulations. "Construction has gone to the suburbs due to lack of adequate ground inside the city, to escape some outmoded building restrictions, and (because) land is cheaper. . . . City planning commissions controlling suburban belt areas are prone to forget in their long range planning schemes that builders and developers must make a profit to continue to build in the perimeter areas. Demands and requirements for dedication that amount to confiscation of property 'are unjust'."

George C. Smith, President, St. Louis Chamber of Commerce, pointed out the need for more consideration of the requirements of industry and that "planning and zoning for industry should be at the forefront with city planners and not treated as an after thought or as a nuisance to be tolerated as little as possible." Carl Gardner, Secretary of the Chicago Plan Association, discussed the failures of ribbon commercial zoning along major arterials and forecast their replacement with modern shopping centers. He did not feel, however, that this predicts doom for the central business district. "There is a mutual dependency between the most remote suburb of a metropolitan area and its downtown center. The pattern of expressways and transit lines, almost without exception, converge upon the heart of the community with its vast and manifold facilities for commerce and trade."

The second session on Streamlining Urban Traffic featured two ITE members, Henry Barnes, Director of Traffic Engineering, Denver, and Thomas Willier, Traffic Engineer of Houston. Barnes spoke on the results of the separate pedestrian phase at downtown intersections and stated that this device dubbed the "Barnes square dance" had the favorable vote of 80% of Denver citizens in a recent public opinion poll. In a later question session, Barnes stated that no study had been made of the effect of this three-phase control on capacity but that such a study was contemplated. Tom Willier spoke on the economic effect of the fifty-mile Gulf Freeway connecting Houston and Galveston. "Economic surveys have revealed that the Gulf Freeway is reducing travel time by 50%. Applying nationally accepted figures for time savings of two cents per minute for automobiles and five cents per minute for commercial vehicles, it has been estimated that the value of time saving after four years of use will equal the cost of the roadway. . . . A recent survey conducted by the Texas Highway Department has revealed that property values within the zone of influence of the Freeway have increased 65% more than the increase generally noted for other properties throughout the City of Houston. This increase in property values in the zone of influence of the Freeway would be sufficient when placed on the tax rolls to retire the right-of-way costs of the Freeway in about nine years."

Frank Balfour, Chief Right-of-Way Agent for the California Division of Highways, followed Willier with a discussion of the effects of By-passes on business. Drawing from the extensive experiences in California, Mr. Balfour stated that "the diversion of through traffic from Main Street by freeway and expressway construction on new alignment is not only a stimulant to retail business activity but also has a beneficial effect upon real estate values." Backing this up, Mr. Balfour quoted figures from six economic studies of by-passed sections. Typical of these was Escondido, California, a city of 6,500 population, wherein business on the by-passed section increased 17.8% in a year compared with a 1.1% increase on the section not by-passed, and a 3.2% increase for the county as a whole.

William Tugman, editor of the Eugene Register-Guard, commented on the one-way grid system inaugurated in Eugene, Oregon, in 1948. A postcard survey of motorists in the downtown area resulted in an 82% vote in favor of the system. A second survey conducted by the Chamber of Commerce among businessmen in the one-way grid showed 313 in favor of the plan and 52 opposed.

Herbert S. Fairbanks, Deputy Commissioner, Bureau of Public Roads, discussed the role of the federal government in urban highway financing, stating that "we are beginning to follow, in the attack on urban highway congestion, the same course that led to such satisfying results in the improvement of rural highways. Since 1946, including funds authorized for the fiscal year beginning July 1st, a total of 850 million dollars of federal aid has been made available for this purpose." In answer to a question from the floor, Mr. Fairbanks stated that the primary obligation of federal aid

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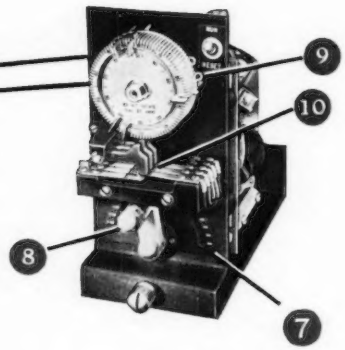
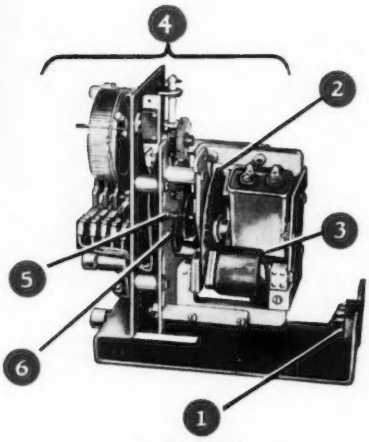
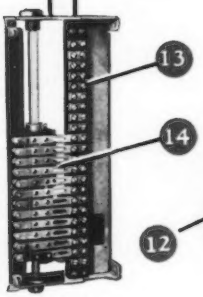


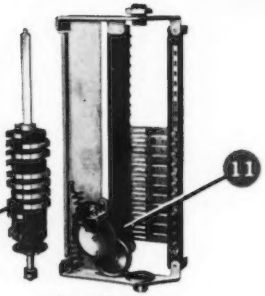
Dial-Unit
Enlarged Front View



Dial-Unit
Enlarged Side View



Cam-Unit
Right Side



Cam-Unit
Cam Shaft Removed
Left Side

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Type LS Synchronous Controller

It provides for future growth

At any location where a single-dial controller is adequate today, but where a more complex controller may be required in the future, the Crouse-Hinds Type LS Synchronous Controller makes an ideal installation. It can be supplied for non-interconnected, future-interconnected, or interconnected operation.

The Crouse-Hinds Type LS Synchronous Controller differs in its basic construction from controllers of conventional design. In the Type LS Controller, each timing-dial with its driving motor is constructed as an individual unit. All dial-units are jack-mounted to the controller assembly, and may be quickly and easily removed.

The Type LS Controller can be supplied with 1, 2, or 3 dial-units. Each dial-unit can be set for a different time-cycle, a different timing-split and a different offset. All controllers have provision for three dial-units regardless of the number of units initially purchased. Therefore, the Type LS Controller is ideal where a single-dial controller is sufficient at the time of installation, but where future needs may call for additional dials.

The Type LS Controller may be purchased with 1, 2, or 3 resets on each dial-unit. When shipped from the factory, all dial-units are wired for 3 resets. Reset 2 and reset 3 may be added in the field to single-reset dial-units by simply installing dial contacts and switch arms. It's as easy as that!

Important Features of the Dial Unit

1. Jack-mounted quickly-removable from the controller assembly.
2. Disc-type synchronous motors provide high-torque with proven reliability.
3. Electro-dynamic braking assures accurate maintenance of offset.
4. All parts readily accessible for inspection and maintenance.
5. Heavy-duty bearings used throughout.
6. Long-wearing, precision-cut reduction gearing.
7. Full-length visual scale shows time-cycle in use.
8. Lotch-in gear shift assures exact engagement with dial gear.
9. Precision dial with retaining ring—timing keys are locked in position.
10. Dial-contact assembly especially designed for easy maintenance.

Important Features of the Cam Unit

11. Motor-driven for greater flexibility, smoother operation, and longer life.
12. Replaceable cam lobes assure unequalled color sequence and interval flexibility.
13. Fifteen circuits wired complete.
14. Heavy-duty color-circuit contacts rated at 10 amperes, 115 volts.

The Type LS Controller is built to Crouse-Hinds high standard of quality from the finest materials by skilled workers. It will solve many of your traffic problems.

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would remain in rural areas due to the greater mileage and corresponding need, regardless of the heavy usage in urban areas.

Gordon Steele, President of the Portland Traction Company, attacked "horse and buggy" regulation of the transit industry and accused regulating agencies of not keeping pace with changing conditions. Mr. Steele stated that only private enterprise can cope successfully with the mass transportation problem and laid down five rules for regulatory authorities:

1. They must recognize that the streets are built for the movement of people and goods, not for the storage of vehicles.
2. They must permit local transit to rearrange its routes wherever necessary to best serve the riders.
3. They must allow readjustment of schedules to meet the changing habits of the riding public.
4. They must allow prompt changes in fare structures commensurate with rising costs.
5. They must completely divorce local transit from the influences of petty politics and political chicanery.

The third session of the conference devoted to problems of off-street parking furnished the pyrotechnics of the two-day meeting. Each of the six panel members presented a different method of securing adequate off-street parking facilities. B. M. Stanton, President of the National Parking Association, presented the case for a laissez-faire approach, stating that "over 80% of the municipal parking plans have been actively sponsored by Chambers of Commerce, merchants, downtown building owners or groups representing these interests. These businessmen sponsor plans for a government to take over and compete with activities of another group of businessmen and at the same time have the audacity to contend that their ideas are not socialistic. . . . There is no such thing as a little socialism."

Quick to answer these charges was Mayor William E. Brown of Ann Arbor, stating that "it has been proven that private enterprise couldn't satisfactorily furnish water service. Neither could it furnish sewer service and the reasons for this are many. It is my conclusion that private enterprise has failed to furnish the third utility that we must have and that is *parking*." Frank E. Cox of Berkeley, California, supported Mayor Brown with the statement that there was no case on record where the parking problem in smaller cities had been adequately solved by private enterprise. Mr. Cox went on to point out the successes of a cooperative effort between city, property owner, merchant and motorist, such as used in Berkeley and Hayward, California.

Between the extremes of Brown and Stanton, Tempest deWolf described a benefit assessment plan which has provided 800 off-street parking spaces in Vancouver, B. C. Mr. deWolf is director of the Downtown Parking Corporation, operating company of the eight lots and one garage in the Vancouver plan. Under this unique system the city floated a million dollar bond issue based on a benefit assessment and purchased the necessary land. The land was then turned over, on a ten-year lease, to the Downtown Parking Corporation to improve, with private capital, and operate.

Lyman E. Wakefield, President of Downtown Auto Park, Inc., of Minneapolis, explained how merchants of that city provided two garages with 1,354 spaces in the loop district without governmental aid. These two garages costing $1,873,615, were financed by the sale of stock to downtown business interests and an insurance company loan. The advantages of this plan, according to Mr. Wakefield, are that "if we permit private capital to seek investment in this enterprise the incentive necessary to assure sharp pencil work in planning, engineering and operation will be present. Quite often this just is not the case when tax-free funds are provided against the full faith of a large group of taxpayers."

Urban Redevelopment occupied the final session of the meeting with Nathanial S. Keith, Director, Division of Slum Clearance and Urban Redevelopment, Washington, D. C., leading with a discussion of the federal interest in city rehabilitation and the progress over two years. H. Harold Leavey told of the experience in Sacramento and William B. Randall followed with an outline of the situation in St. Paul. Alan E. Brockbank, president of the National Association of Home Builders, pointed out the advantages of a cooperative effort of owners, builders and city officials in clearing slums. The successes in Baltimore in rehabilitating 16,000 slum dwellings proved the value of this approach.

A major share of the credit for the success of this conference is due Harold Hammond and Henry Evans of the U. S. Chamber of Commerce, both of whom are members of the Institute of Traffic Engineers. Over 250 people from 16 states, Canada and Hawaii were in attendance including 15 members of the Institute.

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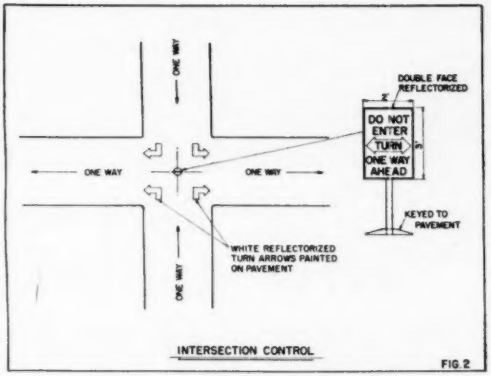
Bureau of Street Traffic, City of Chicago, Ill.

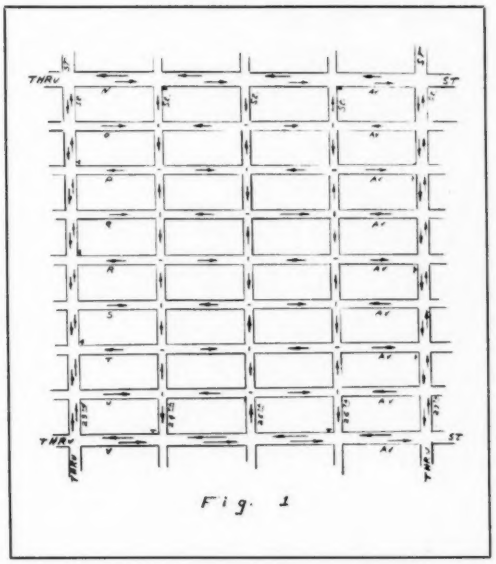
Residential Area One-way Street System

Today there is an overwhelming demand for ever-increasing restriction upon traffic in residential areas. In our larger cities this constant demand can steal into our program and rob us of time and energy. Complaints from these neighborhoods never cease and are never satisfied.

Police enforcement, speed limits, tonnage restrictions and a myriad of caution signs may have a slight effect on accident rates, but they are relatively ineffectual and never satisfy the complainants.

There is no doubt that some of these complaints are well founded, but most of them are based on prejudice and are without basis in fact. Citizens in the residential areas seem to feel that they have an inherent right to the exclusive use of the street in front of their homes. They resent the "intruder" and long for protection from even moderate amounts of through traffic.





Perhaps this pressure can be relieved. With this thought in mind a plan adaptable to the grid type residential area is submitted.

Figure 1 illustrates a typical grid type residential area. This area is bounded by two-way through or arterial streets. It will be noted that the streets within this system are all one way, arranged in a unique pattern. This arrangement discourages through movement, reduces speeds, and eliminates over the road trucking annoyances.

The plan should not be confused with Fritz Malcher's "steady flow" plan which had as its primary purpose uninterrupted flow. Malcher's system attempted to merge large volumes of traffic at high speeds on major thoroughfares. His main objective was to reduce the delay of cross movement by a series of merges. The system proposed here is aimed at low volumes, restricted through movement and slow speeds.

The most startling advantage of such a system is the complete elimination of exposure to right angle collisions. Both accident rates and severity should be markedly reduced.

Another less obvious advantage of such a system is the relative simplicity once the driver has entered the area. Since the system is completely consistent the driver can turn in either direction on any street. The only direction he cannot go is straight ahead. The one sign he must observe is the turn sign directly in front of him (Figure 2). Placement of this sign in the center of the street gives maximum target value with no need for further control at the intersection. This type of signing not only channelizes the intersection but leaves an open area for the unrestricted movement of emergency vehicles.

Further study of Figure 1 will also show that local access is as convenient as on the conventional one-way street systems.

It is felt that since this system is entirely different it will provide a new approach to residential area control.

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The advantages of traffic-actuated control are especially outstanding in handling intersections where three independent traffic movements are necessary to prevent danger and congestion. Depending upon traffic volumes and other conditions a choice of ELECTRO-MATIC MODEL 826D DISPATCHER, or VOLUME-DENSITY MODEL 1033 DISPATCHER is available.

The following illustrates how right-of-way is transferred under varying conditions of traffic demand. Note that phases are skipped on which no traffic is present. Each phase has time extension and memory. A typical four-interval signal color sequence is used. G, Y, and R stand for green, yellow, and red signals.

(a) It is assumed that demand is present on each traffic phase. Note that the dispatcher includes each phase in the cycle.

Period :	1	2	3	4	5	6	1
Street A:	G	Y	R	R	R	R	G
Street B:	R	R	G	Y	R	R	R
Street C:	R	R	R	R	G	Y	R

(b) Here it is assumed that when the green light is ready to leave Phase A there is demand on Phase B, but when ready to leave Phase B, there is no demand on Phase C. Therefore Intervals 5 and 6 for Phase C are omitted from the cycle, and the green light skips to Phase A where there is a demand.

Period :	1	2	3	4	1
Street A:	G	Y	R	R	G
Street B:	R	R	G	Y	R
Street C:	R	R	R	R	R

(c) In this example, when the green light is ready to leave Phase A there is no demand on Phase B, so Intervals 3 and 4 for Phase B right-of-way are skipped, and the green light goes to Phase C in response to demand there. From Phase C it goes to Phase A where there is also demand.

Period :	1	2	5	6	1
Street A:	G	Y	R	R	G
Street B:	R	R	R	R	R
Street C:	R	R	G	Y	R

(d) The assumption here is that there is demand on Phases B and C, but temporarily no demand on Phase A.

Period :	3	4	5	6	1
Street A:	R	R	R	R	R
Street B:	G	Y	R	R	G
Street C:	R	R	G	Y	R

MODEL 1033

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NORWALK, CONNECTICUT

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A DREAM COME TRUE

(Continued from page 397)

frowned on this plan, and since it did not appear to serve the motoring public to the best advantage it was soon dropped. The next alternate plan was the proposed bridge between Norfolk and Berkley, and the tunnel between Berkley and Portsmouth. There was considerable opposition to this by Portsmouth and Norfolk County. The meat of that cocoanut of opposition was in the fact that as owners of the ferries, Portsmouth and Norfolk County gained considerable revenue from them. The opposition finally subsided and preparations were made to finance the project.

In 1945, cost estimates were $12,000,000. That went up to $18,500,000 in 1947. As construction costs soared, it finally wound up at approximately $23,000,000. The banking firm of Alexander Brown and Sons of Baltimore, Maryland, looked over the bond situation, found the project sound, and said they would take the bonds. In 1949 the Commission entered into a contract with this firm, and also J. B. Van Ingen and Company, of New York, to handle the bonds. With these major hurdles passed, the Commission awarded the contract for the tunnel to Merritt Chapman and Scott Corporation, of New York, and the bridge contract to the Tidewater Construction Company, of Norfolk.

Through an arrangement with the City of Norfolk, no tolls would be charged on the bridge portion of the project, and the toll booths at the Berkley Plaza were so arranged that the bridge traffic between Norfolk and Berkley bypassed the collection station. Norfolk pays the Elizabeth River Tunnel Commission annual payments based on traffic volume which will amount to approximately $190,000 per year. The tolls from the tunnel and payments from the Norfolk Bridge will be used to pay off the bonds. After the payment of the bonds, and $2,000,000 to Portsmouth, and Norfolk County, it is planned to make the tunnel toll free.

The bridge portion of the project was opened on Sunday, April 27, 1952. As anticipated, there were many sightseers, and approximately 20,000 cars used the bridge during the first 17-hours operation. After that, the traffic volume leveled off to approximately 17,000 vehicles in a 24-hour day, until the tunnel was opened on May 23, 1952. Now, with the tunnel load superimposed upon the bridge load, the total volume runs approximately 29,000 cars per 24-hour day. The average daily tunnel load is approximately 13,500 cars per 24-hour day. However, about 1,000 vehicles enter and leave the tunnel at the Berkley Plaza so that the total load is not carried over the bridge. In addition to revenue derived from vehicle toll, the Tunnel Commission operates a fleet of buses on an approximately 5-minute headway between downtown Norfolk and Portsmouth.

Tunnel tariffs are as follows: Vehicles are 15c per axle, private or commercial, with 5c for each additional passenger. The bus fare is 10c per person each way between Norfolk and Portsmouth. No pedestrians are permitted to walk through, nor are bicycles, horse-drawn vehicles, or vehicles carrying explosives, permitted.

The Bridge-Tunnel will not only speed traffic between Norfolk and Portsmouth, but it will provide a much needed physical connection between Norfolk and the western portion of the State. It will enlarge Norfolk's trading area, and is the first break in the "Chinese Wall" of water barriers around the lower Tidewater Area. Although water transportation is the life blood of Tidewater Virginia, it has in recent years become a great hindrance in the development of adequate highway facilities. The Bridge-Tunnel will answer a long-felt need and will undoubtedly help speed the planning of other facilities designed to improve vehicular transportation.

WILL OUR CITIES SURVIVE?

(Continued from page 406)

Mobility is being provided around the central business district and provision made for quick access to parking facilities provided within the area. Los Angeles has been provided with many off-street parking facilities in recent years but none quite as notable as the Pershing Square Garage now nearing completion in the heart of the district.

The notable four-level traffic interchange, located at the northwest corner of the central business district, where the Harbor Freeway intersects the Hollywood Freeway, is well known. This gigantic mixing bowl and major highway intersection has been under construction for several years. It is now completed and is destined to become the main "four corners" of the future Los Angeles. The pattern of development around it will vary distinctly, however, from that of the main "four corners" of any community of the horse and buggy era.

Conclusion

Cailfornia has adopted a master plan for freeway development and has made important progress in constructing to the plan. The work extends into the metropolitan areas in a manner approved by leading authorities and the problem is attacked in the central business district where conditions are the worst.

Los Angeles is the first American city and California the first American state to tackle this problem fundamentally. They have made important progress toward the solution which, until today, many people have thought was an impossible attainment.

In bringing this example to the Fourth National Businessmen's Conference on Urban Problems I have felt that my greatest service to you would be to point out in specific terms that our cities will survive as they adopt a plan and execute a program designed specifically as the engineering answer to the basic cause of the problem.

MEMBERSHIP INFORMATION

may be obtained by writing to:

Executive Secretary
Institute of Traffic Engineers
Strathcona Hall
New Haven 11, Connecticut

TRAFFIC NEWS

ITE Vice-President Bruce Crandall (right) shows Washington's plaque he presented Governor Langlie to Director of Highways William A. Bugg, and State Traffic Engineer Rex C. Still (left).

ITE Presents Annual Traffic Engineering Award Plaques

The June issue of TRAFFIC ENGINEERING announced the recipients of the Institute of Traffic Engineers' awards to states and cities for outstanding achievements in traffic engineering during the year 1951. Since then many of the plaques memorializing the awards have been formally presented by officers and members of the Institute. The presentation ceremonies have varied both in arrangement and occasion ranging from specially called meetings of large groups, as an added feature of regularly scheduled conferences, down to simple presentation to small select groups in the Traffic Engineer's office.

Every presentation has brought home to the Institute's representative the fact that not enough is known by the ITE membership at large or others, about what the awards represent, their import, what determines the achievements and the part the Institute plays in the conduct of the engineering portion of the annual National Traffic Safety Contest.

The Institute is solely responsible for the conduct of the engineering portion of the contest, just as the American Bar Association is responsible for the Courts and Legislation segment, and the International Chiefs of Police conducts the Law Enforcement Section of the Contest.

Entries in the engineering section consist of supplying data on forms developed and adopted by the Institute's Committee on Annual Inventory of Traffic Engineering Activities, which continually studies means of securing data in a form promoting better evaluation of program and progress.

The individual awards do not necessarily represent the best traffic engineering setup or techniques, or largest number of traffic engineered facilities; instead each award represents a good traffic engineering program with the greatest amount of advancement or progress as compared with the progress of other competitors during the calendar year using the same yardsticks of measurement. Thus the information requested by the Institute's entry forms is designed to reveal not only the extent of the traffic engineering program, but also the progress made during the year as well.

The Institute's awards are aimed at an impartial judgment of the achievement of the same two basic goals which are the objectives of every good traffic engineering program, namely, efficiency of movement and safety of movement. The traffic engineer's approach to highway safety, as distinct from the law enforcement and educational approaches, is founded on the philosophy that the man behind the wheel is not an automaton but a human being; that to be effective, therefore, physical traffic controls must make it easy for the motorist to do the correct thing and extremely difficult to do the incorrect thing; that an intelligent appraisal of accident statistics should reveal the types of hazards that are encrusted in *existing* streets and highways; that *future* highways must have these potential hazards built *out* of them and all the safety features of which we have learned to date, built *into* them.

The engineering approach to highway safety, in short, is to use traffic controls to scrape out of highway facilities every vestige of potential hazards, to build into new highways every measure of safety and by every other means that human ingenuity can devise, to make it well nigh impossible for human frailties to produce certain types of highway accidents.

Information collected in engineering section entries include type and autonomy of traffic engineering administrative agency, amount of budget and personnel, amount of time devoted to surveys by type, number of device installations and additions, mileage of streets by classes with per cent of standardized marking and signs, volumes of traffic, extent of special traffic facilities in use, problems encountered, recognized and corrected, improvements made, extent of future planning, etc., in short, all

Pictured at Safety Award Luncheon in Wilmington is State Highway Chief Engineer Richard A. Haber holding first place plaque awarded Delaware for traffic engineering excellence, and presented Governor Elbert N. Carvel (right) by ITE President Nathan Cherniak (right center) while State Highway Commission Chairman H. Tyler McConnell (left) watches.

information which could possibly assist in a fair appraisal of the traffic engineering program.

On June 5 during the annual meeting of the Western Association of State Highway Officials at Seattle, Washington, Mr. Bruce Crandall, Vice-President of the Institute, presented to Governor Arthur B. Langlie the plaque representing the ITE first place award for Group IV states to Washington. Governor Langlie in acceptance, most graciously attributed full credit to Director of Highways, William A. Bugg, and State Traffic Engineer, Rex G. Still for the traffic engineering achievements leading to the award.

Cleveland's plaque for Group II cities was presented June 18 by immediate past President, Harry E. Neal, during a Special Award Luncheon at the Hotel Hollenden in Cleveland. The luncheon was arranged by the Greater Cleveland Safety Council which presented awards to several Ohio municipalities participating in the State level Safety Contest. During the program the ITE first place award plaque for Group IX cities was presented by Mr. Neal to Mayor J. Frank Gibson of Rocky River, Ohio.

On June 23, Institute President Nathan Cherniack attended a special Safety Award Luncheon in the Gold Room of the Hotel du Pont at Wilmington, Delaware, arranged by the Delaware Safety Council, attended by Governor Elbert N. Carvel and his cabinet of state agency heads. In presenting Delaware's first place for Group I states plaque to Governor Carvel, Mr. Cherniack remarked:

"The Highway Department of the State of Delaware was one of the first to recognize that safety features can be built into highways. By dualization, for example, it has again demonstrated in the good old American way, the practical way, that through application of engineering principles, transportation on the highways can be fast, convenient, comfortable; that heavy volumes of traffic like those developed by the Delaware Memorial Bridge can be handled expeditiously and yet, at the same time, travel on the highways *can* be safe. Here is conclusive proof that highway safety *is* attainable. But here is also proof that to *keep* them safe requires ingenuity, industry, and continuing leadership and inspiration.

"Your small state has big men who give of their talents, time and energies that precious human lives shall not needlessly be sacrificed on your highways. These men have what it takes—the peculiar combination necessary for successful achievement. You have here in your State of Delaware the McConnells, the Habers, the Millers and their teams; the Shews and the Kellers; the du Ponts, and the Ashtons. Above all, you are fortunate in having the active and continuing inspiration of the Chief Executive of your state who, I understand, reaches down to the very grass roots, lends the prestige of his great office to teach the motoring public correct attitudes on the Delaware highways."

On June 30th Institute of Traffic Engineers Director Joseph L. Wehmeyer presented the first place plaque for Group VI cities to Flint, Michigan, during ceremony arranged by Captain Harold L. Hickman, Traffic Engineer of the Flint Police Department.

The Institute's first place plaque for Group III cities was presented to Buffalo, New York (which had tied with Milwaukee) in a simple ceremony in the office of the City Board of Safety during the morning of July 7 by past President Wilbur S. Smith.

The presentation of the Group V cities first place plaque to Providence, Rhode Island, occurred during the annual meeting luncheon of the Mayor's Traffic Safety Committee on July 15 at the Sheraton Biltmore Hotel in Providence. The Institute was represented by Mr. Philip S. Mancini, Director of the Rhode Island Department of Public Works who made the presentation to Mayor Walter H. Reynolds, who in turn relayed the plaque into the custody of Traffic Engineer Dwight T. Myers.

Positions Available

(See advertisement, page 417)

CITY OF TULSA, OKLAHOMA
CITY TRAFFIC ENGINEER

Minimum Qualifications:

Graduate Engineer with experience in city traffic qualified to direct Department of Traffic Engineering.

Apply: William R. Wooten, City Engineer, Tulsa, Oklahoma.

CITY OF LONG BEACH, CALIFORNIA
ASSISTANT TRAFFIC ENGINEER

Minimum Qualifications:

Graduate in civil or electrical engineering from an accredited college.

Three years of traffic or highway engineering experience.

Age limit 24 through 45 years.

Apply: Long Beach Civil Service Board, 332 Municipal Utilities Building, Long Beach, California.

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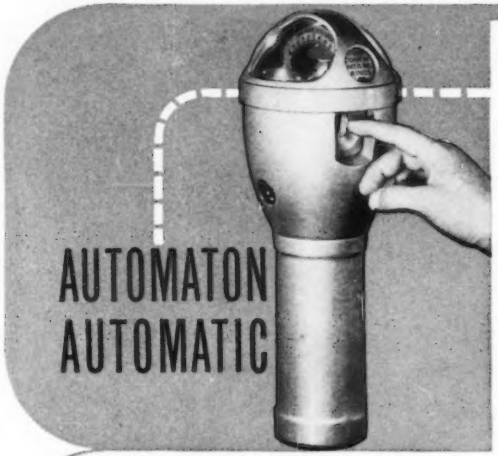
progressive city officials look for and find in today's

NO. 4 most talked-about and most-often bought meters



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Easier On-The-Spot Service

SCREW-ON TURRET TOP insures all-round visibility. Half turn of key unlocks it.

LIFT-OUT ONE UNIT MECHANISM slips in and out of housing as easy as changing a flashlight battery. No fasteners.

COIN SLOT SELECTOR flips open by removal of one screw for removal of jammed coin or foreign matter. Takes but a minute.

PRIMARY SPRING REPLACEMENT takes only a few seconds—merely loosen and tighten housing on mooring posts with fingers.

ONLY SIX SUB-ASSEMBLIES make major repair and replacement of parts trouble-free, quick and economical. Friction-free precision minimizes service attention.

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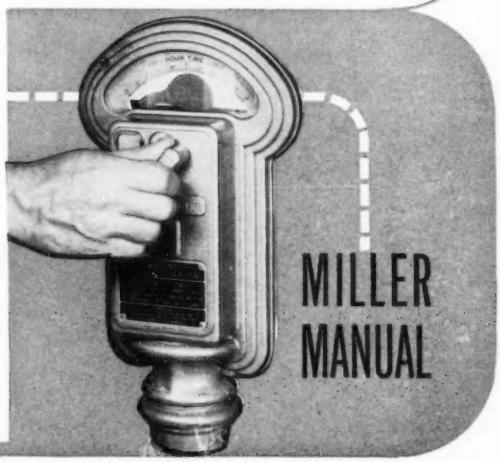
Among MILLER'S many outstanding advantages, the exclusive DOUBLE FLAG and COIN SLOT CLOSER are two of the greatest advantages ever pioneered. Both the trouble flag and violation flag look exactly alike, so regardless of which one is showing it serves as a warning (1) to the motorist that he's in violation, (2) to the patrolman that there is either a violation or that the meter is out of order and requires servicing. There can be no injustice to the motorist either, if the meter is out of order— for the coin slot is mechanically closed when the trouble flag goes up, so no coin can be inserted. Off-size or bent coins will not cause any damage —for Miller's inner coin carrier passes them thru without harm to mechanism.



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States Act to Facilitate Solving of Cities' Parking Problems

A record number of states took action this year to help their cities ease downtown traffic congestion.

The American Public Works Association reports that at least 14 state legislatures adopted laws designed to facilitate the establishment and financing of off-street parking facilities by some or all of their municipalities.

Arkansas cities are now permitted to use parking meter revenues for acquisition of parking lots and highway construction. California permits cities to lease publicly-owned property for periods up to 50 years for off-street parking. Connecticut permits municipalities to create parking authorities to finance off-street parking through bond issues without seeking special state legislative permission.

Delaware now permits cities to create parking authorities to acquire and operate parking projects and issue bonds for such purposes. Florida authorized all its municipalities to finance, construct, maintain and operate parking facilities without special legislative permission. Idaho permits municipalities to issue revenue bonds for off-street parking facilities. Illinois authorized the Chicago Park District to operate underground parking lots.

In the future, Indiana cities will be allowed to use parking meter revenue for retiring bonds issued for construction of parking facilities. Kansas now permits its first class cities to acquire land for off-street parking facilities and to provide additional parking lots financed by issuance of revenue bonds to be amortized from parking lot and meter receipts. Massachusetts' lawmakers okayed installation of parking meters in city-owned parking lots and authorized investment by insurance companies in a proposed $12 million parking garage under Boston Common.

Baltimore was authorized to incur indebtedness of $10 million for parking purposes by the Maryland legislature. Montana authorized cities and towns to acquire land for parking lots and create commissions to establish off-street parking facilities. New Mexico authorized cities with populations of 4,000 or more to install parking meters, acquire parking facilities and to issue bonds against prospective meter revenue.

Reflectorized Civil Defense Signs Now Circle All Larger Cities in New York State

Reflectorized Civil Defense warning signs on roads and highways now circle all of New York State's larger cities it was announced by the New York State Civil Defense Commission.

"The hardest idea we have had to sell the American public is how they can save their own lives," said Lt. Gen. C. R. Huebner, State Civil Defense Director. "These more-than-130 reflectorized signs put up on highways spell out to the civilian night and day the fact that he can't leave the city if there's an atomic bomb attack."

New York State's solution of the acute problem of emergency traffic control boils down to educating the public before anything happens, State Civil Defense officials believe. Every time motorists drive their cars in or out of New York State's big cities they are unwittingly being educated. In daylight they see the 8 by 10 foot signs warning them that that "In the event of an enemy attack this highway will be closed to all traffic except civil defense and military vehicles." At night the headlight beams of the car light up these signs and brightly reflect the warning to the motorist.

This network of signs around the cities serves another purpose General Huebner said. "They help overcome apathy by reminding the motorist that civil defense is a critical problem—his problem, right now. Since the reflectorized signs need no illumination except the beams of oncoming headlights, they won't aid the enemy by offering him a night-time outline of the city nor do they involve costly electric illumination or maintenance."

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23rd ANNUAL MEETING
INSTITUTE OF TRAFFIC ENGINEERS

September 8-11, 1952
Hotel Sherman, Chicago, Illinois

DURING THE
WORLD'S GREATEST
CONVOCATION OF ENGINEERS
CENTENNIAL OF ENGINEERING PROGRESS

The Institute Program

- **SUNDAY, SEPTEMBER 7**
  - AFTERNOON—Registration and meeting of Board of Direction
- **MONDAY, SEPTEMBER 8**
  - MORNING—Registration and ITE Committee meetings
  - NOON—Convention Luncheon, President Nathan Cherniack presiding
  - AFTERNOON—Annual ITE Business Meeting
- **TUESDAY, SEPTEMBER 9**
  - 8:00 A.M.—Biscuit Banter Breakfast
  - 9:30 A.M.—First General and Technical Session
  - 11:00 A.M.—Higher Standards in Traffic Engineering
    A panel discussion by ITE Committee on Philosophy & Principles of Traffic Engineering
  - (Noon—Yale Bureau Graduates Luncheon—Attendance restricted)
  - AFTERNOON THEME—THE ECONOMICS OF TRAFFIC PLANNING
  - 1:30 P.M.—The Needs in Urban Street Transportation
    Speaker to be announced
  - 2:30 P.M.—Costs of Traffic Inefficiency
    Speaker to be announced
  - 3:30 P.M.—Financing Street Transportation Plans
    A panel discussion directed by D. Grant Mickle, Director, Traffic Engineering Division, Automotive Safety Foundation

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- **WEDNESDAY, SEPTEMBER 10**
  - MORNING THEME—DEVELOPING THE TRAFFIC PLAN
  - 9:00 A.M.—City Planning Aspects of Traffic Engineering
    Ladislas Segoe, Ladislas Segoe & Associates
  - 10:00 A.M.—The Role of Expressways in Relieving Urban Traffic Congestion
    Joseph Barnett, Chief, Urban Highway Branch, U. S. Bureau of Public Roads
  - 11:00 A.M.—A Comprehensive City Traffic Plan
    Lloyd M. Braff, City Traffic Engineer, Dallas, Texas
  - (Noon—Past Presidents Luncheon—restricted to past officers)
  - AFTERNOON THEME—SELLING THE TRAFFIC PLAN
  - 1:30 P.M.—Effective Speaking for Engineers
    Dr. Karl F. Robinson, Chairman of Speech Education, School of Speech, Northwestern University
  - 2:30 P.M.—How to Prepare Professional Reports
    Dr. Daniel R. Lang, Professor of Business Writing, School of Commerce, Northwestern University
  - 7:00 P.M.—Annual Banquet—Bal Tabarin (room)
    Principal Speaker: Dr. J. O. Christianson, Supt. of the University of Minnesota School of Agriculture
- **THURSDAY, SEPTEMBER 11**
  - MORNING THEME—TRAFFIC ENGINEERING TECHNIQUES
  - 9:00 A.M.—Sufficiency Ratings for Urban Streets
    A panel discussion directed by Gordon Gravelle, Traffic Engineer, Automotive Safety Foundation
  - 10:00 A.M.—One-Way Streets
    A panel discussion directed by George W. Howie, City Traffic Engineer, Cincinnati, Ohio
  - 11:00 A.M.—The Parking Problem in Residential Areas
    Wilbert F. Watkins, Director of Traffic Engineering, Louisville, Kentucky

ITE 23rd Annual Meeting to be Held During World's Greatest Convocation of Engineers

The 23rd Annual Meeting of the Institute of Traffic Engineers, September 8-11, at the Hotel Sherman, Chicago, Illinois, this year will occur during the Centennial of Engineering's great Convocation of Engineers. Between September 3 and 13 the meetings of 61 prominent engineering organizations will be held in Chicago, attracting more than 30,000 engineers from all over the world. Altogether individual members of the 61 societies will give more than 1,000 technical papers. In addition, general sessions cutting across all fields of engineering will be held. All Society technical meetings will be open to all Centennial registrants. Most of the papers are being written so as to have the broadest range of interest and understanding, rather than the highly technical ones usually presented at such convocations.

The Centennial of Engineering honors the 100th anniversary of the founding of the first national society of engineers in the United States. Although this society was named the American Society of Civil Engineers, it comprised all fields of engineering, as the word civil at that time merely differentiated its members from military engineers. Members in all fields of engineering, therefore, are participating in the celebration.

Some of the outstanding events of the Centennial center about the Museum of Science and Industry in Chicago. Here unique exhibits, demonstrating the basic principles of many industrial processes, are installed.

"Adam to Atom," an elaborate stage production, dramatizing the facts of America's industrial growth, will be presented daily in the air-conditioned Museum theatre beginning July 12 and continuing until the end of the Convocation period.

This musical extravaganza will dramatically portray in colorful and highly entertaining tones, the panorama of mankind's advance by the utilization of engineering and scientific achievements. With a large cast depicitng over 300 character roles in twenty-seven fast moving scenes, the gripping story of man's rise will be recounted from the days of the earliest cavemen right up to the present moment of the conversion of Atomic power.

"Adam to Atom" will be presented on an extensive stage with three revolving sections to implement its fast action. Costumes for the several hundred character parts will be exact replicas of those worn in all stages of the history of man. They will feature the fur loins worn by the caveman, the sandals and collar tunic worn by Egyptians during the building of the pyramids, the flowing silk robes of the golden eras of the Grecian and Roman empires, and others identified with Medieval Europe, the early periods of our own republic, and right up to the latest styles highlighted in our most ultra modern magazines.

Mrs. Helen Tieken Geraghty will direct "Adam to Atom." She also directed the 1948-49 Railroad Fair pageant, "Wheels A'Rolling" seen by more than 2,000,000. The script was written by Ben Aronin.

Musical direction for the production will be under Isaac Van Grove, nationally acclaimed composer and conductor. While he has written an original musical adaptation that includes a wide range of popular American melodies, the greater part of his musical score has been especially created for "Adam to Atom."

Miss Joan Woodruff, who created all the original dance scenes in "Wheels A'Rolling," has again been commissioned by Mrs. Geraghty to write and direct all the choreography.

"Adam to Atom" will be a full hour and a half, jam packed with entertainment. Shows will be held twice daily during the week with a matinee and evening performance. There will be three shows on Saturday and on Sunday. Admission will be $1.20 for adults, 50c for children, and $1.80 for reserved seats. These prices include tax.

Major Lenox R. Lohr, president of the Centennial of Engineering, has stated, "One of the major goals in the celebration of the Centennial is to remind America of the factors that have produced our national prosperity. It will be emphasized that this prosperity might have been long delayed in attainment if engineering, as a profession and coordinated with management and labor, had not established itself as such a powerful motivating force in our national life."

The theme the Centennial will stress in its many activities is the fact that, although with only six per cent of the world's population we in America now produce, own, and use nearly 50% of the world's goods.

In addition to the Convocation and the musical dramatization the Cententennial will present a major exposition. Starting in late July and continuing over a year, millions of people are to be given a first-hand demonstration of those technical, economic and social factors that make America tick. This outstanding exhibit will be one of the kick-off features of the Centennial. It will occupy the balcony of the East Court of the spacious Museum of Science and Industry, on Chicago's lake front.

Hailed by Herbert Hoover, Charles F. Kettering, General Motors research authority, and leaders in science and education as an unusual opportunity to depict what actually underlies America's high standard of living, the exhibit will show basic facts which contributed to our national growth. Industrial exhibits costing millions of dollars and now existing at the Museum will reinforce its general story.

The Centennial of Engineering exhibit will occupy 10,400 square feet of floor space. The exhibiting firms with the highlights of their exhibits are as follows:

Westinghouse Electric Co. will supply an electric staircase which will carry visitors effortlessly to the balcony area where they will be introduced to the story of one hundred years of progress through engineering, and to the atmosphere of freedom without which it would not have been practical. Westinghouse will also show a brief history of vertical transportation. The moving stair is the first ever installed in an American Museum.

Aluminum Co. of America has developed a new construction technique to utilize the peculiar advantages of aluminum as a structural material.

This technique will be graphically demonstrated by an animated model in which the visitor will see buildings rise from the ground in stages.

International Harvester Co. will demonstrate the significance of mechanized farming by showing how the percentage of the population required to feed the nation has been reduced from 84% to 16% in the last hundred years as the use of farm machinery has increased. Three examples of ways to harvest grain will be shown with indications of the amount a man can harvest in one day

with each. These are a man with a sickle, a man with a horse-drawn hand rake reaper, and a man with a modern tractor-drawn combine.

The Link-Belt Co. will show that the old slogan of the medical supply houses, "untouched by human hands," is becoming true in every type of industry because machines can move material as well as change its shape, and can do it quicker and with less effort.

General Motors will demonstrate how radically the tempo of our national life has changed in the fifty short years since the comparably slow pace at the turn of the century was reflected in the fact that a visit to the nearest big town usually meant an overnight excusion, as against the few hours of today.

The world's largest lighting unit, a fifty thousand-watt lamp, as well as the world's smallest lamp, especially made for surgical purposes, will be the focal attractions of the *General Electric Co.* section. The exhibit will trace the history of man's effort to see in the dark, and show some of the great variety of lamps available for every specialized need today.

The Civil Engineer's Corps of the U. S. Navy will exhibit several units tracing the history of that organization, and showing how valuable engineering progress has been in the defense of our country. Great advances will be shown in both temporary and permanent facilities for repairing ships and for protecting men and materials from attack. Several examples will also be given of the artistic care used in early engineering drawings.

The Cincinnati Milling Machine Co. will tell the story of the industry upon which all others depend—the machine tool industry. It will stress how much depends today on interchangeability of parts and what this means in time and labor saving and making industrial goods less costly to buy. The final stage of the exhibit shows a machine cutting a die for the production of an ash tray, and, next to it, another machine which will actually produce ash trays so that the visitor may see just how each step works, and he may acquire one as a souvenir.

The Centennial of Engineering, 1952, Inc., will install a guide panel indicating where the subjects shown in the exhibit may be studied in additional detail in other parts of the Museum.

Director Joseph Wehmeyer reads certificate to Mrs. Morrison and daughter, Mrs. Isabel Morrison Byrne, while (left to right) University of Michigan's Professor Ernest Boyce, Chairman of Civil Engineering Department; Prof. John C. Kohl, Director of the Transportation Institute; Engineering College Assistant Dean Walter J. Emmons, and Dean George Granger Brown; Samuel J. Levine, Michigan Highway Department, and Arthur C. Gibson, Detroit Traffic Department, smile approval.

ITE Honorary Membership Presented Posthumously to Late Roger L. Morrison

An honorary membership in the Institute of Traffic Engineers was presented posthumously June 4, 1952, to Roger L. Morrison, Professor of Highway Engineering and Highway Transport and curator of the Transportation Library at the University of Michigan, Ann Arbor, Michigan.

The presentation was made to Mrs. Morrison and her daughter, Mrs. Isabel Morrison Byrne, at a brief ceremony during a special luncheon at the Michigan Union, by Joseph L. Wehmeyer, a member of the Institute's Board of Direction. He is Safety and Traffic Engineer for the Wayne County Road Commission.

Also present from the Institute were Arthur Gibson, Sign Shop Superintendent of the Detroit Department of Streets and Traffic, who is President of the Michigan Section, and Samuel J. Levine, District Traffic Engineer for the Michigan State Highway Department, who is a Vice-President of the Michigan group.

In his presentation remarks, Wehmeyer said Professor Morrison had been a charter member of the Institute and served as President for two terms. Four of the Professor's students have been named as Presidents and the Institute has grown from 30 to 650 members in the space of 22 years, Wehmeyer declared.

Mrs. Morrison, in accepting the certificate, said she was "very honored and grateful."

Professor Morrison, a pioneer in the development of modern highway and highway transport engineering, had been a member of the University faculty for 28 years at the time of his death March 23, 1952.

Cars Vital to Canada

Canadian defense workers, like those in the United States, rely heavily upon motor vehicles to transport them to and from their jobs.

This fact was recently revealed in a survey of car use at a major jet aircraft factory located 20 miles outside Toronto.

A poll of plant employees showed that 40 per cent come to work in private passenger cars. About half of these drive by themselves, while other drivers pick up more than three passengers on the average.

Some 37 per cent reported that they use buses to get to work. The remainder ride motorcycles or live within walking distance of the plant.

The tabulation showed that only about five per cent of the 7,830 workers live within five miles of the plant, while 25 per cent live five to ten miles away, 37 per cent live 10 to 15 miles away, 20 per cent live 15 to 20 miles away, and the remainder live more than 20 miles away.

Automobile Facts

New Appointment . . .

The appointment of Mr. Paul W. Rice as Traffic Engineer for the City of Evansville, Indiana, has been announced by Mr. Harry E. Thompson, Secretary, Mayor's Traffic Safety Commission of Evansville. Mr. Rice assumed his new position August 1, 1952.

Paul W. Rice

Born in Missouri in 1916, and raised on an Oklahoma farm, Mr. Rice was educated at the Bethany-Peniel College at Bethany Oklahoma, for three years, then at Oklahoma University in engineering for one year. Following four years of non-engineering employment he entered military service as a Lieutenant in the Corps of Engineers in 1943. Upon his release at the end of three years' service he re-entered Oklahoma University and was awarded a B.S. degree in Civil Engineering in January 1948. After employment in the Oklahoma City Engineering Department he enrolled in September 1948 in the Yale Bureau of Highway Traffic. Upon receiving his graduate study certificate in 1949 he was employed by the City of Tulsa, Oklahoma, as Traffic Engineer in the Police Department.

He was instrumental in the establishment, on July 1, 1951, of a Department of Traffic Engineering in the Tulsa city government, and became the Department's first director, a position he has held until acceptance of his new appointment. During the past two years he has served as instructor in the annual short course for Traffic Training conducted by Oklahoma A. & M. College at Stillwater.

He was instrumental in the origin, design and usage of the "YIELD Right-of-Way" sign which has been successfully used in lieu of STOP signs at about fifty intersections in Tulsa. He has written articles on this innovation for TRAFFIC ENGINEERING, Traffic Quarterly, Traffic Digest, and Popular Mechanics, and the YIELD sign has received editorial attention of numerous periodicals and publications.

Last year the Governor of the state awarded Mr. Rice, for outstanding work in the field of traffic safety, a commission as Commodore in the Oklahoma Navy, an organization of prominent citizens honored for meritorious civic service.

Mr. Rice plans for his wife and two children to join him in Evansville as soon after August 1 as suitable accommodations can be secured.

No announcement of his successor in Tulsa has been made.

LOOKING AHEAD

AUGUST 24-27, 1952—LOS ANGELES, CALIF.
American Public Works Association, Ambassador Hotel, Shrine Auditorium.

SEPTEMBER 8-11, 1952—CHICAGO, ILLINOIS
Annual Meeting, Institute of Traffic Engineers, Hotel Sherman.

SEPTEMBER 8-13, 1952—CHICAGO, ILLINOIS
Illuminating Engineering Society National Technical Conference, Edgewater Beach Hotel.

SEPTEMBER 20-24, 1952—ATLANTIC CITY, N. J.
Annual Meeting, American Transit Association.

SEPTEMBER 21-25, 1952—LOS ANGELES, CALIF.
International Association of Chiefs of Police, Biltmore Hotel.

SEPTEMBER 28-OCTOBER 2, 1952—KANSAS CITY, MISSOURI
International City Managers Assn.

SEPTEMBER 29-OCTOBER 2, 1952—BOSTON, MASSACHUSETTS
Annual Convention, International Municipal Signal Assn., Inc., Hotel Statler.

OCTOBER 5-8, 1952—BOSTON, MASSACHUSETTS
American Society of Planning Officials, Copley-Plaza Hotel.

SECTION NEWS

Michigan Section

The June meeting of the Michigan Section was held on June 26th at the Hickory Hills Golf and Country Club near Walled Lake, Michigan. A very successful turnout was obtained when 62 members and guests showed up to participate in playing golf and massacring country style chicken dinner.

Representatives of the Detroit Police Department were the best cheaters in the Handicap Golf Tournament with Patrolman Eichman, Sgt. Olshevie and Inspector Berg walking off with the first three prizes. The Department of Streets and Traffic, however, revealed their ability in the Hole-In-One contest with Ross Harger, Sven Kansman, and Bob Kubiak the winners. Ross Harger was the proud recipient of a beautiful Thundercup Trophy.

After everyone was disgustingly full of fried chicken, the business meeting was held. Sam Levine reviewed the testimonial to the recently deceased Professor Morrison which will be printed in one of the forthcoming issues of *Traffic Engineering*. President Al Sherman appointed various members to act on several of the necessary committees during the year. The next meeting was set for the latter part of September in the Toledo area with Paul Robinette in charge of the arrangements.

The meeting was then adjourned into the cool cellar of the clubhouse where green eye-shades were passed out to all of the Buck-Up players. Refreshments were furnished by several of the vendors in this area, an act which saved the day for many of the scorched throats which developed out on the golf course.

Arrangements for this meeting were made by Sgt. Olshevie and Sven Kansman, who were assisted by Art Gibson, Walt Pletcher and Bob "Buck-Up" Powell.

Reported by Sven Kansman
Secretary-Treasurer

Washington, D. C., Section

Saturday, the 19th of July, 32 members and guests of the Washington, D. C., ITE section, attended the section's eighth annual summer outing. Festivities, which extended from 1 to 8 P.M., took place at Harold Hammond's swimming pool in Silver Spring, Maryland, and included badminton, croquet and fancy diving in addition to good food

and cold drinks. The arrangements committee was under the direction of Burton Sexton.

The outing was attended by the following: Mr. and Mrs. O. K. Anderson; Mr. and Mrs. Mason Butcher; Mr. Don Cleveland and guest; Mr. Gene Clifford; Mr. and Mrs. William Danser; Mr. and Mrs. Henry K. Evans; Miss Susan Hammond; Mr. and Mrs. Harold Hammond; Mr. and Mrs. William Voltz; Mr. and Mrs. Theodore Forbes and guest; Mr. Taylor Lewis; Mr. Joseph LoJacono; Mr. Burton Marsh; Mr. and Mrs. John Mitton; Mr. Grant Mickle; Mr. and Mrs. John A. Moore; Lt. Jack Pate; Mr. and Mrs. Burton Sexton; Mr. William J. Simon; Mr. Frank Twiss.

Reported by Henry K. Evans
Secretary-Treasurer

ON THE SHELF

Compiled by
Mrs. Cele Kagan, Acting Librarian
Yale Bureau of Highway Traffic

New York, New York. The Park Department.
18 Years of Progress. The Department, 1952. 47 pp., pamphlet.

A progress report of the status and future plans of the Park Department as of March, 1952—what they have accomplished and what they expect to do.

Ohio. State University. Department of Civil Engineering and Department of Highways.
Proceedings of the Ohio Highway Engineering Conference, 1951. The University, 1951. 173pp. $1.00.

Most of the articles deal with highway construction problems.

American Association of State Highway Officials.
United States Numbered Highways. The Association, 1951. 179p. $2.00.

This route book contains mileages of approved routes, alternate, by-pass and business routes.

American Bar Association and The Traffic Institute, Northwestern University.
Judge and Prosecutor in Traffic Court: A Symposium for Traffic Court Judges and Prosecutors Conferences. The association and the Institute, 1951. 345pp. $5.50.

Written as a "medium of information for traffic court judges, prosecutors, legislators, and state and municipal officials concerned with improving traffic flow and reducing traffic accidents on the streets and highways." Contains policies and procedures used in the solution of a wide variety of enforcement problems.

American Road Builders Association.
Proceedings 1951 Northwest Conference on Road Building. University of Washington, Engineering Experiment Station, 1951.

American Society of Planning Officials.
Planning 1951. Proceedings of the Annual National Planning Conference. The society, 1951. 157pp.

Atchley, Mell H.
Community Study Guide: "How Well Do You Know Your Community?" University of Florida, Department of Sociology and Anthropology, 1951. 41pp. $1.15.

The "question-form" treatment of this study is in an effort to stimulate discussion and investigation and serve as a basis for intelligent inquiry into the community organization, be it rural or urban. It is directed to various professional and lay groups who are interested in a systematic study of their respective communities.

Automotive Safety Foundation.
Highway Needs in the Emergency: an Engineering Appraisal of Virginia's Principal Roads and Streets. The foundation, 1951. 54pp.

A detailed engineering analysis of Virginia's main roads and streets made in cooperation with Virginia Department of Highway and the Bureau of Public Roads.

Automotive Safety Foundation.
Spot Lighting the Traffic Problem in Salt Lake City, Utah: An Appraisal and Guide for Action. The foundation, Washington, D. C., 1952. 40pp.

Report constitutes a general appraisal of traffic conditions and administrative practices in Salt Lake City and the recommendations included deal largely with management problems.

Branham, Arthur K.
Transportation Factors and National Transportation Policy: A Partial Analysis. The University of Purdue Engineering Extension Department, 1951. 186pp. Research series No. 112, Engineering Experiment Station.

The study presents a partial analysis of the economic significance of each form of transportation, a discussion of the national transportation policy, need for greater safety and fewer barriers to interstate commerce.

Cleveland. City Planning Commission.
Our Downtown Parking Headache and How We Can Cure It. The Commission, n.d. 11 pp.

A preliminary report on the Cleveland Downtown Parking Survey directed to the "citizen-at-large" containing recommendations for public and private action.

Illinois. Department of Public Works and Buildings, Division of Highways.
Present and Future Improvement Needs of the Primary and Federal-Aid Secondary Highway Systems. The Department, 1951. 23pp.

A comprehensive study of the condition of the several road systems. The report presents the situation in regard to the State system of primary roads and of the county Federal-aid secondary system.

Jenny, L. Alfred.
Report on the Acute Transportation Problem Existing Between Northeastern New Jersey and the City of New York. The New Jersey Department of Conservation and Economic Development, 1951. 47pp.

Col. Jenny offers three alternative programs as a solution to the vexing problem: A) The Rapid Transit Plan; B) The Railroad Terminal Plan, with the terminal located in the heart of Mid-Manhattan, and C) the Railroad Terminal Plan, with the terminal located in the Hackensack Meadows, and with a Rapid Transit line linking this terminal with the City of New York.

Ohio Department of Highways.
Traffic Survey Report of the Mahoning Valley Metropolitan Area. The Department, 1951. 117pp.

A comprehensive survey of the area including adjacent and contiguous fringe areas conducted in cooperation with the cities of Youngstown, Warren and Niles, and the Bureau of Public Roads.

Baltimore. Department of Planning.
Capital Improvement Program for Baltimore. The Department, 1951. 154pp. $2.50.

Part I brings up to date the programs presented first in 1947 and again in 1949 and Part II contains the program recommended by the Planning Commission for the next several years.

Miami. City Planning and Zoning Board.
Street Plans, Miami, 1951. The Board, 1951. 35pp.

Michigan. State Highway Department.
How Roadside Features Affect Traffic Accident Experience: Second Progress Report on the Michigan Study. The Department, 1951. 30pp.

Report describing the current progress of a research project seeking to determine the relationships between accident occurrence and various features of the road and roadside made in cooperation with the Michigan State Police and the Bureau of Public Roads.

Before selecting a pavement marking material Robert A. Burch* asks these three questions . . .

*MR. BURCH is the Traffic Engineer for the North Carolina State Highway Commission, Raleigh, N. C. He is shown here during the application of transverse test lines to determine performance of reflectorized pavement marking materials.

1. Is the material the desired color...and does it hold that color?

2. Does the material handle well? Is its shelf life good? Does it apply well, with a reasonable drying time?

3. Is it durable? Does it give lasting day and night visibility?

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Philadelphia. City Planning Commission.

Capital Program Public Improvements 1952-1957. The Commission, 1951. 123pp.

The Planning Commission's recommendations for public improvements of sewage, flood relief, water supply, refuse disposal, transportation, health and welfare, housing and redevelopment and other public buildings. Also contains list of expenditures for projects completed 1946-1952.

Rhode Island. Providence. City Council.

A Traffic-Transit Integration Plan for Providence. The Council, 1951. 74pp.

Report prepared by Smith, Dibble & Company, consulting engineers. A survey undertaken primarily to develop means for achieving more efficient use of existing streets through traffic regulations, transit changes, and minor physical improvements, with an investigation of all phases of the congestion and accident problem.

Sawhill, Roy B.

Travel-Time Techniques on a Two-Lane Rural Highway. The Institute of Transportation and Traffic Engineering, University of California, Berkeley, Los Angeles, California, 1952. (Student research report No. 3). 55pp.

Study conducted primarily to evaluate three different methods of determining travel time on rural highways, i.e., sampling license check, test cars and spot speeds. The secondary objective was to collect "before" data of a before and after study of a highway improvement.

U. S. Bureau of Public Roads.

Highway Statistics, 1950. U. S. Government Printing Office, 1952. 140pp.

Sixth of an annual series presenting the 1950 statistical and analytical tables of general interest on motor fuel, motor vehicles, highway-user taxation, financing of State highways, highway mileage, and Federal aid for highways. Data for the financing of highways by county and local rural governments and information concerning local street financing is also included.

Connecticut. State Highway Department.

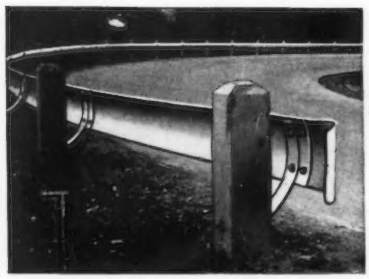
A Plan for the Solution of the Post Road Congestion Problem. The department, 1952. 47pp.

A report by H. W. Lochner & Co., consulting engineers to analyze possible location, including the Inland Highway and the Shore Route, for the development of an all-purpose highway to serve the Route One commercial and automobile traffic.

Connecticut. Darien. Town Plan and Zoning Commission.

Off-Street Parking Plan for Darien Center. The Commission, 1951. 21pp.

A study of the parking situation with proposal providing for 500 cars, with a future expansion to 800 cars. The total cost, including access drives, is estimated to be less than $200,000.



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Secretary's Column

This issue carries the program for the forthcoming 23rd Annual Meeting. A departure from normal custom was necessary this year in deference to the wishes of the Centennial of Engineering Progress Committee, in that the date is much earlier than usual and the papers that will be presented are mostly of more general interest rather than the strictly technical variety of the past. This is because our technical sessions this year are expected to attract visiting engineers in related fields whose societies are holding their meetings during the great Convocation. It is quite likely that many ITE delegates will take the opportunity to attend some of the sessions of the other societies in related fields; however, our program has been so well planned by Program Chairman George Barton that visitors attracted will greatly outnumber ITE delegates lost to the competition.

We are planning a special Convention Issue for the September magazine, with free distribution to ITE registrants and visitors. The issue will be built around articles on traffic engineering and engineering works in Chicago and vicinity. Publication date is being advanced two weeks so that the magazine will be available at the Annual Meeting, and advertisers have been encouraged to gear their messages to the occasion, insofar as possible. Special Convention Issue ads have been solicited.

Ted Siegel of the Local Arrangements Committee and Associate Editor of *Traffic Engineering* has been of immeasurable help in the planning of, and and preparations for, the special issue. He has badgered the reluctant authors, run down the illustrations, solicited additional advertising, kept Headquarters advised of the local plans, met deadlines, and generally done an all around bang-up job.

Tim Todd

Centennial Day Program

Your Secretary has received the following letter from Mr. E. L. Chandler, Convocation Manager, Centennial of Engineering—1952:

Inasmuch as the printed Convocation Program will not be available in advance of the Convocation, the program for Centennial Day, September 10, is given with the thought that you want the information.

CENTENNIAL DAY LUNCHEON
Conrad Hilton Hotel Ballroom—12:30 P.M.
Tickets—$5.00

(Continued on page 425)

Yearbook Changes

These changes have been published in a desirable place in the magazine so that they can be clipped and pasted in the appropriate pages provided in the Yearbook.

ADLESON, CAPT. IRWIN J., USAF (Junior)
Wright-Patterson Air Force Base
Dayton, Ohio

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3585 Habersham Road, N. W.
Atlanta, Georgia

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Assistant Traffic Engineer
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Tech. Asst. to State Planning Engineer
W. Virginia State Road Commission
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Route No. 2, Nitro, West Virginia

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DIBBLE, WORTHAM W. (Member)
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Sumter, South Carolina

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National Association of Manufacturers
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Kensington, Maryland

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33 East Grand Street
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Georgia State Highway Department
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Atlanta 3, Georgia

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Evansville, Indiana

TAYLOR, F. WAYNE (Assoc.)
1510 Morton Street
Ann Arbor, Michigan

WHEDON, BURT (Junior)
835 Anderson Terrace
Topeka, Kansas

Member Change of Title and Telephone Number

ECKER, JOHN B. (Member)
General Manager. MIchigan 6363

Member Change of Title

KANSMAN, SVEN (Junior)
Associate Traffic Engineer

RYKKEN, KERMIT B. (Assoc.)
Special Assistant to the Executive Vice-President

NEW MEMBERS AND TRANSFERS

Transfers

WALTER E. DUCKER, Jun. to Assoc.
DANIEL L. GERLOUGH, Jun. to Assoc.
RAY C. McCALLY, Jun. to Assoc.
FOREST H. GREEN, Assoc. to Member.
WILLIAM R. MARSTON, Assoc. to Mem.
J. CARL McMONAGLE, Assoc. to Mem.
HARLAN F. PERDEW, Assoc. to Mem.
WILLIAM O. SHRADER, Assoc. to Mem.
EARLE W. TAYLOR, Assoc. to Mem.

New Members

JUNIORS

BAERWALD, John E. (Junior)
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Chicago 1, Illinois

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California Division of Highways
SEND MAIL: 4035 Platt Avenue
Fresno 2, California

PRICE, 2nd LT. HARRY O., AO1863601 (Junior)
Transportation Officer
Hq., 315th M&S Group
APO 963, c/o Postmaster
San Francisco, California

ROSA, IRWIN H. (Junior)
Junior Civil Engineer
Calif. Div. of Hwys. 2100
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San Luis Obispo, California

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City Hall
Richmond, California. BEacon 2-1212

WALONS, RICHARD A. (Junior)
Traffic Engineer I
City of Chicago
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River Forest, Illinois

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Eureka, California

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Harrisburg, Pennsylvania

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SEND MAIL: 2021 Wiggins Avenue
Springfield, Illinois

MEYER, ROBERT L. (Assoc.)
Associate Engineer
Traffic Engineering Section
Dept. of Roads & Irrigation
State Capitol
Lincoln, Nebraska

AFFILIATE

KLAMM, E. R. (Affil.)
Accident Prevention Manager
Allstate Insurance Company
3245 W. Arthington Street
Chicago 7, Illinois

CENTENNIAL DAY PROGRAM

(Continued from page 424)

Invocation.

Greetings to the Convocation—Mayor Martin H. Kennelly, Chicago.

Greetings to ASCE on behalf of the profession—Alan S. Quartermaine, President, British Institution of Civil Engineers.

Response—Carlton S. Proctor, President, ASCE.

Award of the John Fritz Medal to Mr. Benjamin Franklin Fairless, President, United States Steel Corporation, with appropriate ceremonies, including an address by Mr. Fairless.

Award of the Hoover Medal to the Rt. Hon. Clarence Decatur Howe, Minister of Trade and Commerce, and Defense Production, Canadian Government, with appropriate ceremonies and an address by Mr. Howe.

Already, many scrolls carrying greetings to ASCE from other societies in honor of its one hundredth anniversary have been received. All will be on exhibition at the Conrad Hilton Hotel. In view of the large number, it has not been considered feasible to arrange for personal presentation of each scroll. As noted in the above program, President Quartermaine has been invited by Centennial of Engineering, 1952, Inc., to extend greetings on behalf of the entire profession.

* * * *

CENTENNIAL EVENING PARTY

International Amphitheatre—7:00 P.M.

Tickets—$11.00

Dinner will be served in the second-story wing of the great International Amphitheatre.

After eating, the diners will move into a reserved section of the Arena, where Mr. Charles F. Kettering will deliver an address on the subject "A Review of the Century."

The audience then will remain for a special performance of the Sonja Henie 1953 Ice Review. This is an entirely new production. Originally scheduled to open on September 11, this special showing has been arranged in recognition of the significance of the Convocation.

Business dress is appropriate.

Realizing that time is short, I suggest that every effort be made to inform your membership of this program.

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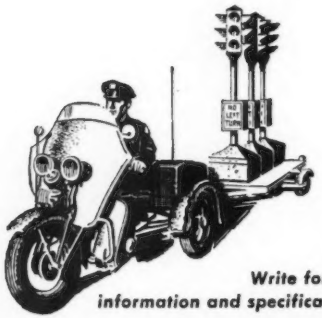

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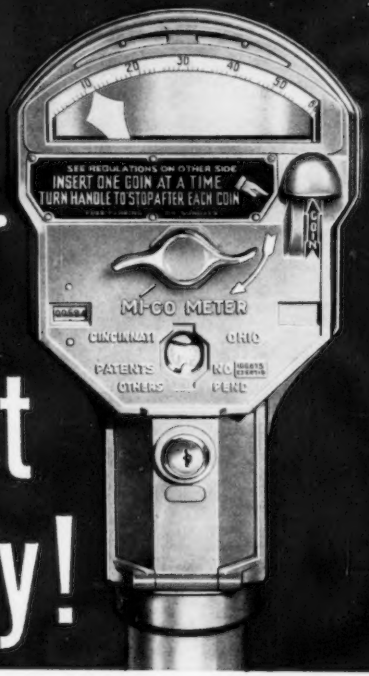

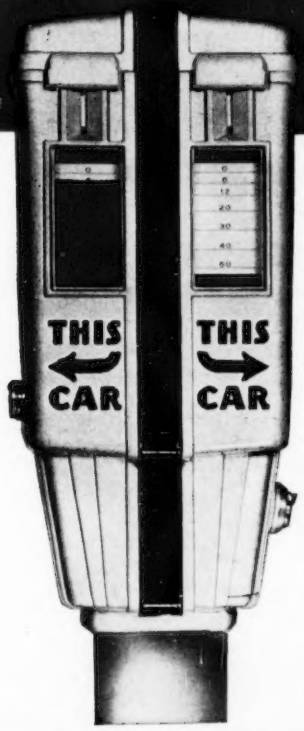

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